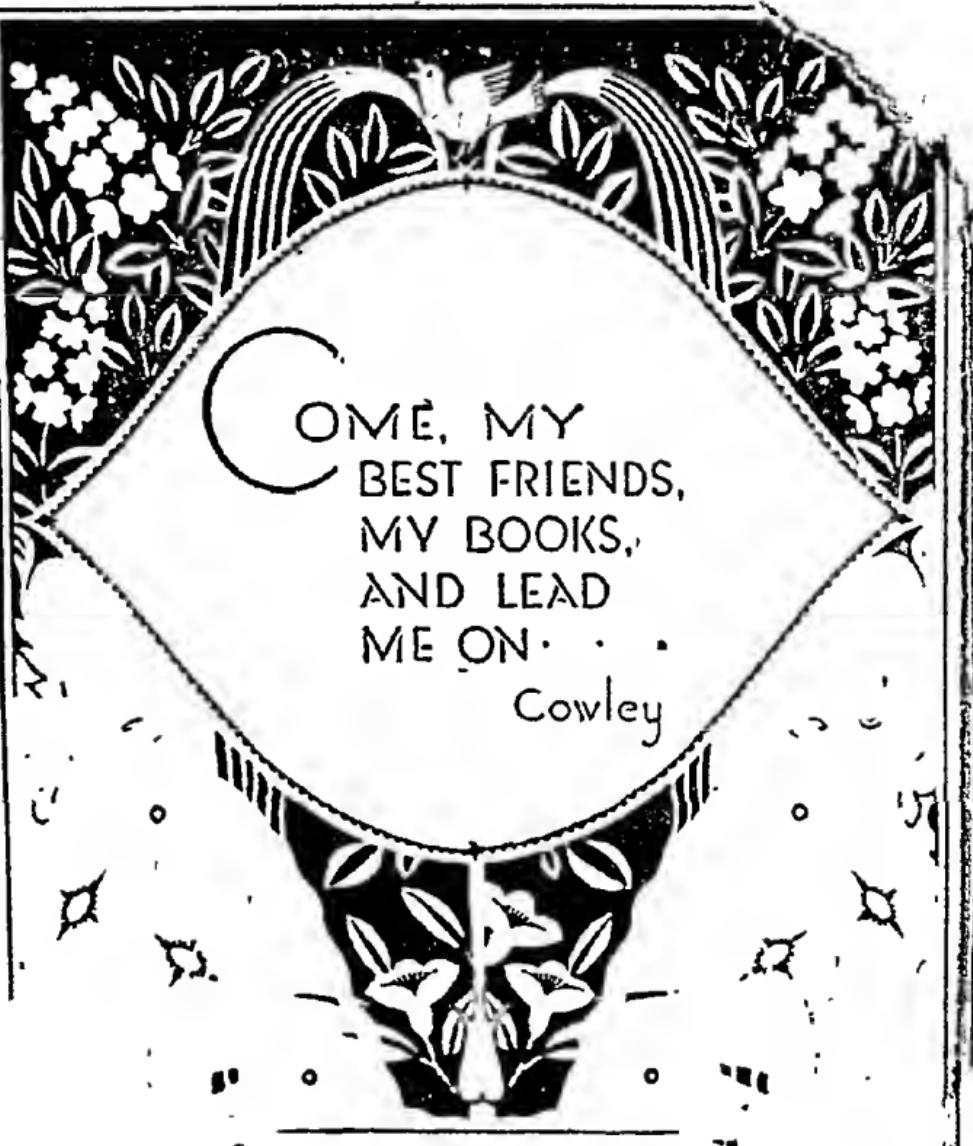




AN OBSERVER'S TWELVEMONTH



COME, MY
BEST FRIENDS,
MY BOOKS,
AND LEAD
ME ON . . .

Cowley

~ ~ ~ ~ ~

COLLINS'
KING'S WAY CLASSICS

AN OBSERVERS TWELVEMONTH

SIR W. BEACH-
THOMAS

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PREFACE

Most of these chronicles of a quiet year in a country parish appeared in the *Observer* week by week. Not quite all are of the same year. A few passages are taken from articles in the *Spectator* and in *Overseas*, to whose editors I am much indebted.

WHEATHAMSTEAD, HERTS, April, 1923.



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EACH of the English months has its own peculiar character. Most have been labelled, and many libelled, by standard nicknames or doggerel verses. January is the most hardly treated of all by the rhymers :

"The blackest month of all the year
Is the month of Janiveer."

It is much the coldest, the most wintry of the months, yet, in England, so sweet and gentle is the gradation of our days, we taste in January the first savour of the spring. Perhaps most of our English seasons pretend at intervals to be some other season ; and we may usually see traces of April and May in the very midst of winter. Characteristic January days may be bright with the sparkle of snow crystals or of hoar-frost ; and "Dick the Shepherd" will often "blow his nail" to bring the feeling back to his finger-tips. Nevertheless, rarely does a January pass without the blossoming of flower and the burgeoning of leaf. It will astonish the less observant countryman in England to know how many birds begin building nests ; rooks and robins and sparrows and, earliest of all, the crossbill in northern, and Norfolk, pine trees. And the pick of the homeland singers now sing their best, above all the thrush, choosing, as a rule, the peak of some elm or fruit tree, and the larks who greet every warmer morning almost as soon as the sun is up. The hours of daylight,

lengthening perceptibly, cheer bird and beast, in spite of the doggerel poet who maintains that the cold will grow stronger as the light grows longer. A good many creatures begin to hibernate while autumn is still warm, but begin to stir a little in their slumbers when January is in kindly mood. The hive-bees send out a few emissaries to spy out the land and bring in water supplies from the dewdrops on the grass blades. I have known the bats to leave the dusty rafters of an old barn and hawk about the lawns in the twilight. The honeysuckle is always in leaf before the month is old, and unless the frost is abnormally long and hard, it is odds that you find both primrose and violet in flower, if you know where to look ; and both have all the sweetness of scent proper to a real spring flower. The tilths are green with the even lines of the winter oats and of wheat ; and the partridges are pairing before their official close season begins on the second of February. No, Janiveer is not black. It is often white, and, when the sun melts the snow, green and gay. Even the so-called "bare boughs" of elm and hazel are dotted with plentiful flowers, not the less lovely for being inconspicuous. The folk who fly England in January miss much. It happened to me in the year 1922 to land in England, after a journey round the world, on January the first. The winter was open, and the fields very green and trim as the train from Plymouth threaded the mosaic. An old Ovidian tag came into my head—that the year ought to have been started in the spring—*vere novo incipiens erat*. But there is a good deal to be said for beginning with the increase of light, especially in England where the winter landscape has exceptional beauties—greater, I think, over wide spaces than the summer landscape. How much more easily, at least at a distance, you may tell the species of the trees. From a favourite window the sky line is fringed with single trees : beech, ash, elm, oak and larch—and they

always seem to me doubly themselves when the leaves are off : "Beauty unadorned's adorned the most."

At the worst January brings us the first note of expectancy.

"The buried bulb doth know
The signals of the year
And hails fair Summer with its lifted spear."

We are a little like Coventry Patmore's bulbs. We put out feelers and taste what is coming. I came upon a curious example of this. Some writer was complaining that the poets who gushed when real spring came were silent at the opening of the year ; and he quoted Tennyson as an example, and out of Tennyson selected as an example of springtime fervour :

"Bring orchis, bring the foxglove spire,
The little speedwell's darling blue,
Deep tulips dashed with fiery dew
Laburnums, dropping-wells of fire."

but they forgot that in this stanza from *In Memoriam* comes in an address to the New Year.

"Dip down upon the Northern Shore
O sweet New Year delaying long ;
Thou dost expectant nature wrong ;
Delaying long, delay no more.

O thou New Year, delaying long,
Delayest the sorrow in my blood,
That longs to burst a frozen bud
And flood a further throat with song."

If we must search the poets for winter zeal, we shall find scores of eager welcomes to frost. One of the best is Coleridge's direct address with its large-hearted climax.

stand—"I think it's the colour that gets in your throat." The startling blues of the sea—dark and light in patches beyond the queer geometric purple and green pattern of the cultivated pine-apples—is gorgeous enough, but almost too queer to be lovely.

Most of the show scenes all across the American continent are best the first time you see them—Lake Louise, Banff, the Grand Canyon, even Vancouver, or the view from Government House on Vancouver Island. In Auckland and in Brisbane you hurry to the top of One Tree Hill to catch one of the spacious wonders of the world. Rotorua is a mongery of marvel. The glory of Sydney, and, in rather less degree, of Albany in Western Australia, is chiefly the glory not of land but of sea. The land is no more than a frame to the picture. Even Kandy, in Ceylon, can be appreciated in a few minutes of time. Table Mountain, or the Iron Gates on the Danube, or the upper plains of the Pyrenees at Font Romeu, or of the Alps between St. Moritz and Pontresina, or the luscious autumnal richness of Cadenabbia on Lake Como—the virtues even of these miss a quality that belongs to chosen niches of country within a day's walk of London.

What is the quality which you discover, say, in the country east and west of that strange architectural monument, the Welwyn Viaduct, that is missing outside England? One thing we all feel. The better you know these places the more you admire and perhaps understand them. You cannot exhaust the charm of it all partly because of the mysterious quality of the atmosphere, always half revealing and half concealing. But more than this: the virtue is the virtue of classic architecture, in so far as no detail is so salient as to interfere with the whole; but the virtue is the virtue of Gothic architecture in the grace of its aspiration. How high the spires of the elms reach up, and how rich is the fretwork of their roof! A kestrel over the elms recalled instantly the hawks that often

hover over Cologne Cathedral. In summer the spires will become solid domes and the woods walls. Now in winter you see through and into everything, detect the depths of the wood and watch the flocks of field-fare or finches or the rapid pigeons dipping to the sloping tilth behind the screen of trees. All is spacious, though all is enclosed. All is mysterious, though all is homely. Quite this gracious conjuncture some of us have never found outside the English counties. The quality is pure English.

THE WINTER FIRE

OUR quiet has been disturbed by repeated gales, that have fetched off many elm boughs and Jan 12 tumbled some young plantations on their side. But the disasters have their unearned increment. All about the countryside, children, women, and old men, armed with many strange instruments, have been falling to work upon the trees. Our English villagers do not, like the French, look to the adjacent grove as part and parcel of rural life, without which existence in winter would be a cold job indeed; but they know a good deal about the qualities of wood in a fireplace, and our fires will be all the warmer for the winds. Elm, that pillar of the English scenery, has almost the worst name. The countryside is still littered with trunks that fell in the March gale of 1916, "root and all, branch and all." Some still lie clear of the ground, held up at one end by a part of the root, and, at the other, by an odd bough. In all these ten years the trunk has not softened. It is harder to cut now than when it first fell, incredibly stony on the outside, making the saw skid, and sodden and sulky within, causing the saw to clog. If coal went to £10 a ton, the poorest people

would not accept the trunk as a gift. Other elms, though they fell from the roots have kept a lively connection with the ground. The bole still puts out fresh faggots of shoots every year. A crack where some optimist began to saw has become the matrix of a host of small shoots sprouting from the depths. You would say that the whole tree had gained in vitality from its own death. The country folk are persuaded, perhaps rightly, that there are several species of common elm—one crooked and cantankerous, the other straighter and just amenable to wedges. But they like neither for burning. Yet, if cut at once and kept two years elm burns brightly and cheerily enough on a winter fire. Under any other conditions it sulks. If it is at all damp it needs a good coal fire to burn it up, and if it is at all rotten it is a mere depressant.

The real virtue of the fallen elm is in its bark. When dead it harbours as many creatures as the oak when alive. Enough silk is spun between the bark, which is very thick, and the wood to clothe the whole population. Spiders, earwigs (why do we not still call them *erewiggles*?) wood-lice, centipedes, moth-cocoons, swarm. The queen wasps are peculiarly fond of hibernating there, at least in my experience. The looser morsels are often chosen out by earth worms. Even plant seeds enjoy the bark. One of my elms fell among nettles, and a year later the whole trunk was concealed by nettle seedlings, which flourished as if they were a parasite mistletoe.

Oak has a high reputation for burning well; but it is hardly deserved. It consumes itself almost like coke, so very sparse is the flame; but, if not a cheerful wood, it gives warmth, and burns away steadily till the whole log collapses in a piece, like Wendell Holmes's "one-hoss shay," into a light, thin ash, almost like a cigar.

Elm and oak are the most difficult to reduce to the

log state (if we rule out such close-grained exotics as cedar). Sycamore is the easiest. I have often—for it is the commonest tree along my paddock—split a long trunk from end to end with a blow or two of the wedge. The saw goes through it like butter. The smaller boughs break in pieces at the touch of an axe that is the least blunt. And sycamore burns well—much better than its reputation—with a merry flame, though not a very hot one. A cottage fireplace will consume a huge tree in the space of a few weeks, so rapid is its extinction. Other soft woods are much less kindly. How many British soldiers in the war struggled in vain to create a fire from the black poplars that crowd the Valley of the Ancre and, indeed, almost every lowland in North, Eastern, and Central France!

You would expect the pines and firs to be more amenable than they are. A fallen Scottish fir—which is one of our three native evergreen pines—after lying for a year altogether defied the saw though it was a wide-toothed well-set cross-cut. When at last brought to the fire, it flamed gorgeously but like most of its class, needed watching. Now and again it would spit and jump with all the virulence of a sweet chestnut left unpunctured.

Of all the native hard woods growing wild, beech is the best; and nothing becomes it like its manner of dying; it makes a fire for the gods. What a tree it is! No trunks are so splendid. No boughs spread a finer canopy. The red leaves are only less gorgeous in their withered state than in their salad days. No leaves compare with them in richness for use on our gardens. Winchester Cathedral stood solid for 1000 years or so on a raft of beech trunks; and even then the marsh rather than the decaying of the trunks caused the walls to crack. The chief engineer spoke to me almost with reverence of the wood's endurance and the faith of the men who laid this queer foundation.

But many of the exotics are yet more glorious for

fire-making. It was my fortune once to fell and cut up for the fire some old laburnum trees that had reached their natural end. Even the greenest and thickest logs flamed like a tar torch or a slivered Brazil nut. With the exception of laurel it has no rival. Old lilac trunks—which have streaks of lilac colour right through the tissue of the wood—not only burn well, but have almost as aromatic a smell as sandal wood. All fruit trees burn well, especially plum. Apple is hard to deal with, and resembles oak a little in slow steadiness of its consumption. The quality of the ashes, the readiness to turn to charcoal, the mood and behaviour of every species of wood give the wood fire a charm beyond the reach of coal or coke or peat or any other fuel; and one of the best places in which to enjoy the study is beside the garden bonfire, which all good gardeners should keep burning always. But the garden bonfire is a theme in itself.

GARDEN ANTICIPATIONS

No one who set forth to peer into the crevices of the garden would deny to January its claim to
Jan. 20 be a beginning of the floral year. To observe
by peering, as Tennyson with his short-sighted eyes used to peer, is the more petty, the more self-conscious, way of seeing; but it has certain merits. The gardener especially must peer very close into tiny corners that he wots of precisely. This last summer a number of Alpine plants were removed from their native haunts in Bérusal to my alien English wall. Peering after them has proved a most heartening pursuit. The more common gentians are all alive, and a majority of the campanulas have taken root.

But how much besides the Alpines themselves one saw—the eggs on a withered apple-leaf, the hibernating

wasp, the young spiders, and the tracks where the jenny wren had been peering, too! And without such a particular search one would perhaps hardly have felt how near January comes to being a real spring month. Meredith has sung of February as a month of spring flowers, though he has made their struggle bitter and not always successful; and Coventry Patmore has found "signals of the year," of the spring year, in the very grip of winter. But has any poet ever had the hardihood to celebrate the flowers of January, the coldest of all the months of the year? Some one should. It makes very little matter how true to its qualities January is, a certain number of very lovely blooms will not be denied their glimpse of the New Year, though there can hardly be much purpose in their boldness.

In 1924 the bees had already begun to search for pollen, three weeks earlier than the year before, so it is not always in vain that the first of the flowers, not least the aconite, possess most of the arts of attraction. How thickly and effectively at a later date the deep yellow dust is sprinkled all over the little flies, back, legs, head, everywhere. It refuses all timid wise precautions of the snowdrop that makes a diving-bell of its centre cup—very much after the fashion of the diving spider—and by a delicate alchemy keeps the temperature higher than the climate warrants. But both seed very freely, especially the aconite. In one rich old garden, where the soil is peculiarly to its taste, it proves the very worst of all the weeds, invading even the gravel paths, where it looks doubly hardy one of these rough January mornings. The truth is that the botanists have over emphasised the neatness and precision of the devices by which seed was set. The dandelion—one of the chief of the incorrigibles—will multiply itself, according to the latest theory, wholly without "the vulgar way of matrimony," as old Sir Thomas Browne used to say. An unfertilised

fragment will produce a new plant. That is the final stage in the struggle of nature to free itself from all checks to rapid reproduction !

Yet quite a number of plants do set their seed in January ; and as some birds and some insects and other "creatures" (a country term for the woodlouse) they accept the convention that the year begins in January. The wild-duck are paired, and the crossbills and those stalwart old monogamists the ravens. The bee-hive hums ; pale moths take love flights under the ivied bole, before they run risk from the hawking pipistrelles.

An astonishing number of plants, mostly exotic, take kindly to our English winter, and cheer our gardens with gay patches. The Christmas rose, which has a certain supremacy, perhaps hardly deserves its name. Though the flower in itself is lovely enough (as are most flowers), the plant never quite escapes from the ill-omen belonging to the hellebores, expressing poison more violently in their foliage than denying it in their flowers. Yet the hellebore has a gift common to not a few other species of purging its own stain. The flower seems to have reached a higher plane, and thrown off its native dross. How few people realise the essential delicacy of the garlic flower ! Its honey-like scent is as soft as the juice of the leaves is rough and repellent.

The other flowers of January have no stain to purge, and most gardens would gain by a more conscious endeavour to construct an early corner. The approach to the golden age is too long postponed without at least two varieties of the witch-hazel, without the daphne mezereum, without, of course, the winter jasmine, lusty forerunner of the more riotous forsythias. But the bushes are secondary to the lowlier flowers. Why is it that the so-called double arabis—it is not really double—which flowers in the bulk later than the single, as a rule, notably this year, develops a few

very perfect New Year blooms? The early irises imported from Southern Europe become quite numerous. How satisfying to the eye that peers is the stencilled pattern on the cyclamen leaves or the sign manual of the hepatica! Not least is the early primrose or primula, which can be found by selection. There are individual roots of these with an incurable habit of premature bloom. In my garden there are two in a gravel path that always flower first; and I can always find a December primrose in one particular spinney.

CLOUDS AND WEATHER

WE do not enjoy the sky-scape as much as we should, with its "huge cloudy symbols of a high romance."

Jan. 24 Clouds, the alphabet of weather lore, curiously various in colour, shape, altitude, and behaviour, have been careering over our heads these strange windy days—over fields absurdly bright with buttercup and daisy, over commons unseasonably gay with gorse, over flooded valleys, and over unseeing towns. How far, I wonder, how thoroughly do those who issue weather prophecies collate from different observatories news about the sorts of cloud that prevail? For now and again the clouds have given the lie to the glass, and the clouds have won, though the glass—in this case no *lucidi honoris speculum*—has directed the prognostic. There is now an "international atlas" of clouds, which should be a great help to the descriptive reporter of cloud shapes and heights, and should help to prove in the eyes of the prophets that at least in regard to thunder the "cumulus" cloud is trustier than any barometer.

We have seen within a week or two almost all the

classes of strange phenomena belonging to the sky, whether by night or day. The crescent of the new moon "held the ould moon in her arms" so aggressively that country children stopped to stare. The black circle looked incredibly fat, and, if one may say so, "bulgy," as if it must fall from the slender grasp of the crescent, like the pig and the flamingo in the arms of Alice. Another night the misty halo so enveloped the moon that you might easily mistake the crescent for a full circle. Moon, luminous mist, and halo made a single body.

One of the loveliest sights commonly presented, but rarely noted, is the prismatic halo round the sun, and that too has been very splendid; but the world is ignorant of it because it is too bright to be visible except with the aid of the "black mirror," a little bit of apparatus that some toy-maker should popularise. It brings the heavens very near and makes its paradisal tints familiarly visible.

Most of us have noticed the hurry of the clouds. They have flown overhead like rooks blown about the sky; and for some reasons these birds have migrated at their highest during these stormy days, as if they were playing the game of cloud-racing. Sometimes the clouds have run an easy, regular, if rapid cross-country race; but on one day at any rate they acted like the "petits chevaux" at Wembley Park, racing past others so quickly that the remoter, higher, solider formations looked to be standing still, aggressively obvious. The little vague black films might have been smoke from a noisome fire carried off by a groundling wind. To speak generally, clouds vary in height from one-third of a mile to a mile and three-quarters. The rain clouds sink lower; the white fleecy wisps of "stratus" and delicately patterned "cirrus" float high above Olympus. Some of our Christmas holiday clouds were certainly not more than half a mile away before they began to weep their burden to the ground, and

thereupon make one continuous cloud joining earth and sky.

But the oddest, most untimely clouds of this winter have been the thunder-clouds, the "cumulus," formed by rapidly ascending vertical air currents before our very eyes. They have been born on the spot, have appeared from nowhere, like the phantoms of a dream, portending strange events. Such shapes do not properly belong to winter; and being out of place have built themselves into an architectural form quite of their own. The usual cumulus is an upright mass, blown out into snowy mounds, into woolly heads, into corrugated domes, white at the top and deeply coloured—from slate to black—in the wrinkles and at the base of the column. The mis-timed thunder-clouds of this Christmas have been lower and slighter, but of every sort of hue. One complete peak has been silver, and the next to it a royal purple. The outline of the range stood clear against a narrow slip of blue, while, for the rest, the sky was possessed by dull, sepia, formless stragglers, that would presently coalesce into raincloud, and the nimbus quite blot out the cumulus.

The pleasantest quality of our strange sky-scapes has been what may be called without offence "lucid intervals." At the time of the most venomous onsets, especially the incredibly sudden hailstorms (that always fell punctually at just three o'clock in the afternoon) a singularly level line of light has appeared along the horizon behind the storm. As it widened it changed to a brilliant green—the colour that Coleridge saw and Byron (was he colour-blind?) could not; and no rainbow ever gave more sure assurance that light would succeed to darkness. The clouds rushed away as a flock of birds might, and left not a wrack behind. The signs of the sky made weather-prophets of all of us. For at least half an hour we were sure of the future.

OPENING THE HIVES

THE bee-keeper has arrived, with slabs of food. He is full of cheerfulness. All his own seventeen
Jan. 25 swarms have survived the winter; but after inspection he confesses that mine is the strongest he has seen.

It is an exciting moment opening the hive to see how the bees have fared during the dark days. In an open season many of the creatures that retire into winter quarters to sleep the chill months away have some trouble to continue their slumbers. They are restless. The bumble bee shifts uneasily and rubs against the polished mud walls of her hole. The hedgehog will put a nose out of the mossy snag of the coppiced trunk, where it has retired to forget the need of food; and the pipistrelle is found asleep in a bird box that was empty the other day.

Owing to this restlessness the sleepers, the half-sleepers, and indeed nearly all animals, except the most obstinate hibernators, whom nothing will awake, feel the pangs of hunger much more acutely after a warm than after a cold winter. This hunger is most obvious in the hive bees. Their winter habit depends chiefly on the temperature. If it is very cold you may lean your ear against the hive and scarcely catch a note. The hive ventilates itself and the punkah of wings is not much needed. The whole swarm is inert, without the prompting to move or to eat. A very small store of food will suffice.

The state of the hive has been very different this winter. Hundreds of my own bees were abroad flying bravely several yards from the hive during the second week of January. And they were working hard at the grim task with which their year usually begins, even as their year ended. On a casual glance you might think

to-day that a second killing of the drones had been ordered. A number of workers were hard at it dragging bee bodies out of the doorway on to the alighting board, and sometimes throwing them over the edge. But the victims were no drones, but the casualties of the winter, mostly older bees who had reached their natural term. Some were not dead but sick, and were dragged out protesting feebly. As soon as activity begins it is against the spirit of the hive to allow the inner chambers to be cumbered with either the dead or the sick, and they are evacuated so soon as enough energy is restored to the community.

You may also tell the strength of the swarm by the earliness and completeness of this work. The swarm I have been watching is quite abnormally strong. Looking down between the frames was like looking from a New York skyscraper on to the thin streets at the lunch hour, where the crowds look "scarce so gross as beetles". You could see only bees, hundreds and thousands of them—a most cheering spectacle—and letting in the light from the roof stirred them into movement, very much as the striking of the luncheon hour. And luncheon hour it was; for among the bees who had ventured out of doors were a few carrying little wads of material that were found to be the caps of freshly opened honey-cells. The return of the light was being generally celebrated by a carouse. The hive was hungry and eager, desirous of food and impatient for work.

The sight of this zeal is an absolute command to the bee-keeper to supply more food. The one danger of the hour is starvation. It is in the open winters that the swarms perish. Want of food is nearly always the cause; and it is difficult to be sure how full have been the combs left for the winter supply. In one neighbouring garden a rather weak swarm had perished off the earth because the frames, thought to be well stocked, had in fact never been filled in the gloomy

days of last autumn. In another all the seventeen hives were in good case. It has been a good winter for all that had sufficient honey and were protected from wet. What a thorough satisfaction it was after watching for a while the strong and healthy community, to introduce gently between the frames a great slab of sweet food that not the greediest and most multitudinous swarm in Christendom could well consume before the clumps of single arabis offered more delicate fare ! It was delightfully difficult to set the slab in place, so packed was the space. The open days may be a trap for the bees. They are tempted too far from the hive and may be paralysed by cold before they can reach their warm hearth again. But that danger is greater in March or April, or even in May, than in January. Even when the hundreds come out in January all, so far as observation went, kept very close to the hive, hugged the home shore ; and a shadow, a puff of cold wind, sent them all indoors in the twinkling of an eye. Just as the dangerous frosts for the flowers are those that fall late in the year when the petals are open, so the bees will defy the chills of January, but suffer mortal wounds from April frost or hail. As yet the most active workers are as timid as any flower-bud. They are not bold enough even to sting, as the observer discovers to his gain.

Bees themselves are a perennial source of interest in a garden ; and are hardly less interesting in literature. Our local bee-man, though a labourer, exults in the literature and has borrowed my favourite book. I am anxious to try him with Maeterlinck, but if he agree with me he will prefer Tickner Edwards.



FEBRUARY brings in the cardinal change of the year, for Candlemas Day, the second of the month, announces the end of winter warfare. The great "weapon-still-stand," as the Saxons used to say, or armistice is signed. It is no longer lawful to shoot game. The partridges may pair in peace, and the cock pheasant go off undisturbed with his several hens. In this respect spring begins, as an English poet wrote in an address to February :

" O baby spring
That fluttered sudden neath the breast of earth
A month before the birth."

But spring is more than embryo. In the sweet-smelling pine woods the crossbills often have young before the month is out, before the short twenty-eight days are over. Wild duck and raven and rook, sometimes robin and thrush and missel-thrush follow at a short interval. And how hilariously they then sing, along with other lusty home birds: the dunnock, (as we all ought to call the so-called hedge-sparrow) the jenny wren, the tits, and above all the lark. Except for the honeysuckle, few leaves venture forth; but flowers are less timid than leaves. The elms grow purple, and empurple the landscape, with masses of barren and inconspicuous flowers. The catkins of the hazels dispense golden pollen over the scarlet stars of the staminate blooms. Spring flowers are open in spinneys and in gardens: the yellow aconite, primrose, violet, the snowdrop and the crocus. The "lifted

spears" of the daffodil, growing wild in the Home Counties, become stouter and taller, and change from green to gold.

The old weather-mongers said some severe things of the month ; but its customary epithet " *Filldyke* " is a disguised compliment. February is really a dry month, but, as a rule, the springs rise, and the least trustworthy wells fill up with water, not because the rains of February are frequent or free, but because the winter moisture has penetrated deep below ground and made itself effective.

With the single exception of St. Swithin, Candlemas Day is the chief favourite of the country prophets. Their general view is that :

" If Candlemas Day be fair and bright
Winter will have another flight.
If Candlemas Day be cloud and rain
Then winter will not come again."

It may hail, it may snow, it may freeze in February ; and generally does all three ; but St. Valentine does not hold his festival on the middle day of the month for nothing. The gaiety of spring is abroad and her proper work begun. How quickly the days seem to lengthen out and the signs of summer itself to multiply ! Even when it is at its worst, February stirs expectancy and induces a sort of excitement. The sleepers begin to awake, the bat from the rafters, the hedgehog from his ditch, wasp and butterfly from their crevices, the bee from his hive. They come to see, and though they may retire, they know that the world has begun again.

Some years the close season comes too late. I have seen pairs of partridges murdered one after the other in the last week of January. Good sportsmen are careful enough to leave the pairs unmolested ; but some having vainly throughout December and January

pursued the shy coveys and yet shier packs cannot resist the opportunity of the new tameless. You may walk up to courting pairs that will lie closer than the youngest covey on September the First.

Most of the armistices are too late. Many a fox and many a hare heavy with young are hunted by hound and harried and beagled throughout the spring. Such hunting seems to me, who am no humanitarian, in some sort a crime against life, a *lèse majestè* against a much holier thing than any monarch or state.

WIND AND SCENERY

THE scenery of England, always susceptible to changes of climate as well as of season, will be visibly
Feb. 2 altered for a generation or more by the gales and wet combined of the winter. A great number of the trees, both larger and smaller, have been tilted for the rest of their term towards the north-east. Now and again exceptional gales, coming at a crisis in the season, may level, as if they were ninepins, the elms, which give to our English scenery as distinctive an architectural style as any Corinthian capital or perpendicular panel. The upward reach of the boughs, combining into the outlines of a rather flattened dome based on a single shaft of great height, announce the species at any distance, at any time of year. You are as little likely to take an elm for any other tree as St. Paul's or Tom Quad for a Gothic spire. The shape as well as the broad grain is not calculated to resist strong winds ; and the want of any tap root completes the likeness to a ninepin. Yet, rather surprisingly the gales of the last few months have not actually upset any great number. The fatal casualties were fewer because every aged weakling was laid low by the historic gale of 1916, when every other road was blocked by the

trunks, and more than one estate, such as Panshanger in Hertfordshire, counted the victims by the thousand. Though few are felled very many are weakened, especially at the side of roads and streams, and a great many boughs are down. On such sites the roots are often one-sided, and the result is a small slope towards the weaker side. But this is a protection, not an added danger in many particular instances ; for should a suitable wind blow the trees are more apt to be felled towards the side where the roots are stronger. On the edge of the River Lea, for example, the fallen trunks lay after the 1916 gale at right angles and all away from the stream, not bridging it. An elm—as Kipling and Jefferies have noted in strangely similar language—does not fall when you expect it to fall. She rather waits :—

"Till every breeze be still
To drop a limb on the head of him
Who doubteth her sovereign will."

or as Jefferies had already said in more particular detail, she will "wait ten years" to drop a bough on you.

And it is certain that when the small and flimsy flowers, now colouring the roof of the woods, give place to heavy foliage many of the sloping trunks and yet more of the bent boughs will quite collapse. Our deciduous trees are saved by their want of leaves, as surely as our English intellects by their "want of logic." Even the oak is an easy victim if snow falls in company with a driving wind at a belated date when the leaves are out. Indeed, no other tree is thus quite so susceptible. The lateral spread of the bough standing horizontally in defiance of gravity is atoned for in normal seasons by the exceeding toughness of the fibre ; but a little extra weight is the last straw, and the defiant Hercules cracks.

As our gales of this year were wintry, the worst sufferers have been the evergreens. In some more or less recent plantations at least eighty per cent. of the conifers to-day lean at various angles from the perpendicular in a north-easterly direction. In one particular grove, planted only six years ago, the trees were set upright four several times before the endeavour was given up. Not all the king's horses and all the king's men could set them up again permanently. But bigger and older trees suffered hardly less. In most gardens adorned with exotic pines or firs a fair proportion bend more or less away from the west. Some seem to give the lie to all the proper rules of gravity. Sequoias—which our insular botanists insist on misnaming Wellingtonias—are leaning hard on their broad lower boughs, and the roots on the south-west side have tilted the ground into a mound. A large number of spruces are in much the same case, bending so far over that it is a miracle they do not fall. But a root is a miraculous bond. It is so soft, even when broad and of some age, that an axe will go through it as if it were butter; but so flexible and tough, so prehensile of the soil into which it has wound its way, that it may be called unbreakable. Nevertheless, after a very long wet period even the roots lose their grip. In most cases the trees have half fallen, not so much because the gales were overwhelming as because they coincided with a softened, a diluted earth. A building cracks in dry weather because the sub-soil, especially if it be clay or marl, shrinks. Trees are weakest in their foundations when the excessive wet softens the cement about the roots. It is then that "grouting" is needed. The whip and taper of the trunks are marvellously designed to save the base from strain and distribute the pressure, especially in the pine and fir. But we often plant these species in the soft soil to which they are not to the manner born; and when that alien loam is more than normally soaked the result is collapse.

Wind is always by far the worst of the gardener's enemies, as of the forester's. Even the small bushes feel the strain. A fond gardener visiting his favourite shrubs after recent nights of storm found a number shifting within the compass of a hole much bigger than the base of the stem, which had swung this way and that till it had smoothed the earth round it into the polished semblance of a well-used rat hole. The worst sufferers were large rose bushes left unpruned, such as Penzance briars; and all transplanted trees and bushes went in risk of their lives. Never did hard hammering of the earth about the roots and good staking give better results. But there are few gardens, indeed few landscapes, in which a shrewd observer could not to-day infer the extent and nature of recent gales. A good proportion of the trees and bushes are a set compass, very much like the groves of the west coast, where the trees slope in regular gradation, dwarfed on the western margin, taller but still not tall on the eastern. So they stand, kneeling, bent, erect, in their several ranks, to receive the charge of the western enemy.

LONDON AS SANCTUARY

I HAVE been looking at the London birds, especially in
Feb. 4 Hyde Park, where a kindly woman (who was
once a country neighbour) has been feeding
daily a magpie and several duck. The
magpie was a surprise, though as many as ninety
species of birds have been observed in London. After
all, birds and beasts are easily tamed for the most part
and soon lose their fear of multitudes. Every traveller
will recall his surprise and pleasure at this or that
example of the penetration of the town by animals
regarded as wild. The most vivid memory of a visit

to the open and pleasant town of Toronto is the presence in every other square of the red and white wood-pecker. The birds, splendid in colour and quaint in habit, clearly delighted in the town and flourished, like the sparrow, in urban conditions. Over the delicious parks of Washington you may see at any time buzzards circling round and round on their broad wings and floating upward on the draught they create. How playful are the squirrels in Albany? How natural the roe-deer look on the artificial hills of several small Canadian towns? These are American examples. The Continent supplies as good. The storks are the children's best friends in many German towns. In Cologne the most interesting thing about the prim and too logical cathedral is the assembly of hawks that arch round and round it, above the pigeons.

London, even as things are, excels perhaps all of these cities in hospitality to birds, if not other animals. The best example is Kew. It is rich in birds beyond the knowledge of nearly all Londoners. You may hear there a great proportion of the migrant warblers, and some nest along with quantities of wrens, robins, and blackbirds and thrushes. And England is a land of sanctuaries. It is to be hoped that all bird lovers know all about the Brent Valley Sanctuary, which is a miracle. That nightjars should gather in numbers in such a place is a success that perhaps no naturalist would have anticipated. Of course, the most wonderful Park in the world is Woburn. Where else but in England would you dream of experiencing anything like the first glimpse of the Park where it opens to view at the last bend of the road by the Abbey gate? All manner of exotic animals—yak, emu, zebra, and every conceivable variety of deer dash across the grass in a sort of sham alarm. Round the circular pond below, unimaginable duck and waders stand in groups watching the others swimming and diving. Beyond you may find almost a herd of wapiti charging down on

you. You say with all the conviction of the good lady who first saw a giraffe, "I don't believe it." It is really very difficult to believe your eyes. It will be of the greatest benefit to London—in which he is not altogether uninterested—if the Duke of Bedford, with the Duchess, would give the world the result of his experiences. Woburn has been quite the best practical trial ground of the possibilities of naturalisation, of semi-domestication, and, above all, of the relation of animals to one another, of what do or do not, in Henry James's phrase, "consent to a mutual relation." Can rabbits, squirrels, pheasants, and small birds flourish together? The question in many aspects has been fully answered in the Woburn experiences.

The subject has two divisions. One is the provision of what may be called park Zoo's, such as exists in the Central Park, New York. The intended restoration of the deer to Greenwich Park is after the American model. Squirrels and pheasants—golden, silver, Amhurst, and the rest—come under this head. The other is the deliberate attraction of wild birds into the towns. Here is the great opportunity of maintaining and enlarging a real, unsophisticated *rus in urbe*. A certain taste for town life has been very apparent in birds during the last fifty years, when first the black-headed gulls, with a few herring gulls, came up the Thames, found friends on the Embankment, food on the surface of the river, and roosting places on the reservoirs. Above Chelsea, I have watched rooks and starlings imitating the gulls and clumsily picking food off the stream. This first week of February there was to be seen in St. James's Park a charming epitome of sanctuary life. On a Babylonian willow perched two moorhen. On the bank below three immature black-headed gulls stalked about among a group of divers, sheldrake and ruddy sheldrake. The whole assembly were as little shy of the curious spectator as the

sparrows that a little farther on fed out of a man's hand, or the fat wood-pigeons under whose beaks they picked up crumbs.

How can this movement of the birds be encouraged ? Definite introduction of birds is one way too little attempted. The St. James's pigeons are descended from birds enlarged from a Prince of Wales's dovecote. They did not come. They were put there. It is probable that other birds would stay and multiply if once introduced. Why not woodpeckers, birds very faithful to a locality and very good to look upon ? Heron were at one time as constant inhabitants of Battersea Park as dabchick on certain reservoirs. It is probable that pied wagtails, birds of native tameness, would enjoy life in London and nest successfully. At the moment there is small chance of their survival owing to the cats, which now take heavy toll even of bigger birds, such as the duck in St. James's and destroy almost every nest of ground-nesting birds in the suburbs. It is still painful to recall the calamitous end of a chiff-chaff's family in Dulwich College Garden. But it is quite easy to make cat-proof enclosures. A cat surmounts an obstacle by jumping almost perpendicularly and scrabbling with its claws for the rest of the journey. Any wire fence, even fairly low, if bent over at the top, will stop a cat.

When once a place is well circled the botanist must be called in. One of the only plants that will not grow at all in London is lichen ; and that is hardly necessary for nesting, though long-tailed tits would miss it. The provision of undergrowth is a necessity if migrant warblers are to be attracted, and of small bushes for the dunnocks. Blackberries, snowball, and low evergreens and—may it be suggested ?—nettles would all serve the purpose. For the rest artificial nesting-places on the model of the devices at the Brent Valley Sanctuary would be necessary. It should not be above the ingenuity of the committee that has been

appointed to investigate the subject to advise what marshes or ponds this and that species would enjoy.

THE DELL-HOLE

A NEIGHBOUR showed us to-day his favourite dell-hole
—a delightful phrase used by all the country
Feb. 18 people to describe those ponds in the chalk
which hold trees and shrubs and flowers
instead of water. They are beautiful everywhere,
but are at their best where they have fallen within
the circle of a cultivated garden. He has planted it
thickly with "milk-flowers"—as Linnæus called the
snowdrop—and they have further multiplied of them-
selves. More than this, they have assumed seductive
patterns, as if that were as proper a part of their
definition as the crystal forms of a snowflake. A pool
of white is at the bottom; and up the north, but south-
looking slope runs one long white bent arm that might
belong to a nymph of the dell-hole struggling to be
free. The humble flowers shine between the trunks
of trees rising a hundred feet or more, and swim on a
green pool in a softened light. You might fancy that
if a stronger sun penetrated they would melt away.

That is the right way to grow snowdrops. The
milk flower should appear in a Milky Way where
bands of light join the starry clumps; for though the
bell of a snowdrop is—may one say?—a melody in
green and white and gold, the multitude that make
the landscape glory is of first importance. It is so
with almost all the early spring flowers, because the
early flowers are short in the stalk, whether as the
snowdrop they hang down their heads, or, as the
crocus, point the golden stamens towards heaven, or,
as the violet, look neither up nor down, but use the
leaves for a yashmak, concealing all the face but the

eyes. When we come to March the trumpet daffodils will be held high ; and though they, too, are best in clumps, they must have a wider margin than the February flowers. That delightful botanist, Canon Ellacombe, has pointed out that, within the single genus of the crocus, the gradation of size is strictly in accord with date. *Minimus* comes first and *maximus* last, with a number of majors in between. This modesty we can only overcome by planting them in colonies. But they are as naturally gregarious as rooks or starlings or winter partridges. Was not the first large import of snowdrops into England due to a traveller astounded by the splendour of their mass in some European meadow. They reproduce themselves, very rapidly and by several means ; and the families keep together.

This winterless year Baby Spring opened its eyes many days, even weeks, before the usual date. January gave us primroses, primulas, cyclamens, violets, snowdrops, crocuses, aconites, even aubrietia and arabis, and in the fields or on railway banks masses of the leafless coltsfoot—a flower as lovely as the best, either where it grows or plucked and set upright in moss. But in some measure we may ensure earliness, however late the season. It would be easy, though few gardeners attempt it, so to arrange the bulbs that they make a continuous scroll of spring. By no more than a superficial study of species, merely of snowdrop and crocus, you could plant a band that would become progressively lifelike from January to March. Most bulbs are very pat to date. The patch of *minimus* crocus would open at the proper interval from *maximus* year after year. But the early year is the best for bulbs, for they are a little heedless of danger, and when frosts are severe very many a crocus “lays its cheek to mire,” if the hoar-frost yields at all suddenly to thaw. And when they expand with the expanding light very early in the year, the pleasure in them is

peculiar. They then matter supremely, as do every few minutes of extra sunlight.

It has become almost a commonplace that successive tides of colour invade the world: first, the white and delicate green of the snowdrop or wild anemone; then the fine yellows of crocus and daffodil, coltsfoot, celandine, and the rest. But the theory is not true of the garden, with its exotic denizens. The very gayest of all the colours of the year are found in the dark blue squills and grape hyacinths, the white-blue chionodoxas—not yet fifty years old in England—the flaming scarlet of anemone fulgens or the purples of the February crocus and iris. All these, though historically exotic, take so kindly to England that some begin to grow wild, and none—no, not one—asks for any special, most favoured treatment. They flower as freely as ever they flowered when they caught the eye of the Sicilian poet or were beloved by the peasantry of Smyrna and the Caucasus.

THE URBAN WOODPECKER

ENGLAND is wonderfully rich in close and affectionate observers of birds, both in town and country.

Feb. 20 A rather remarkable instance of their coincident observations occurred this week. One of my neighbours has been watching a greater spotted woodpecker. His very lovely garden is notable for its birds. Partridges nest against the house. The nesting boxes are always filled. The nuthatch is one of the common birds, and is carefully encouraged. One of the owner's humane amusements is to fix nuts cunningly in the crevices of the bark of the rougher trees. They vanish quickly; and where nut and crevice fit more than usually tightly, the bird hollows out the nut where it is, leaving the perforated shell *in situ*. Wryneck and hawfinch are peculiarly fond of the neighbouring fields

at certain times of the year. In such a blessed spot it is scarcely to be wondered that the woodpeckers should be found. All the three varieties frequent the parish. It is strange that simultaneously in Hertfordshire and Middlesex this rather rare species, the greater spotted woodpecker, should have suddenly become conspicuous. A letter in *Country Life* calls attention to its presence in a garden at New Southgate, and a letter in the *Field* to previous appearances in the heart of London: the greater spotted in Kensington Gardens and the lesser in Hyde Park. May we presume that changes in weather have stimulated a local migratory movement? The greater spotted is not technically migratory, though a good many—perhaps of a slightly different variety—cross the Irish Channel. But they move about a good deal in winter from county to county; and it would seem from country to town. It is, of course, a peculiarly "observable" bird, as distinctive, whether on the wing or climbing a trunk, as the jay or magpie.

My personal experience is that woodpeckers in general have a natural affinity for towns, and could be converted into regular residents if officials of the Office of Works were not quite such admirable foresters. Decaying trees are almost a necessity for the species, though in other countries artificial substitutes have been found. German naturalists have been peculiarly successful in attracting the birds by the provision of bird boxes and, on occasion, suitable food. You may watch them at very close quarters in the squares of Toronto or the little groves up the slopes behind Montreal, where they seem quite at home, however noisy and populous a crowd has traffic below them. Even the less lovely accompaniments of a town attract them. The green woodpecker is probably more numerous to-day on the refuse dumps outside London than anywhere in England. They are drawn to these as the green plover to the sewage farm at Brooklands.

It is not, then, strange to find the woodpecker near London, but there is some reason to believe that all three species are increasing within the home counties, and, therefore, perhaps more of them becoming "daily-breaders."

A big and obvious bird that has not a little excited observers in the Eastern counties this week is the wild-goose. Their strange ventriloquial honk has been heard perpetually in the neighbourhood of Cromer and Sheringham, as they flew on local migrations both by day and night to and from their favourite feeding-grounds. They have multiplied steadily, one would say, thanks no doubt to the half-sanctuary kept by Lord Leicester on the Coastland Marshes. At the summit of the seasonal migration to the protected area it was calculated that the congregation numbered over a thousand.

How eagerly geese respond to protection, I first discovered in Canada. An admirable and most original naturalist has attracted great numbers to his sanctuary near Detroit, and found them so tame that he caught a good many up, fixed little plaques to their legs, and as these were returned to him by scattered sportsmen he was enabled to plot out with exactness the line of their incredibly long migration. The dockets contained his address on one side and a biblical text on the other. His idea is that the text inspires the destructive sportsman with a livelier sense of duty, of which the first article is to send back evidence of the crime!

HIBERNATING DANGERS

REPEATED rains that have made this February deserve its name of Filldyke (though usually it is a Feb. 22 dry month) have quite altered the landscape.

The valley of the Lea is a lake. But apart from any greater examples, many little landslides as disastrous in their effects as the crash of Robert

Burns's coulter in the mouse's nest, have altered our miniature landscapes—made new promontories and islands in the streams, new valleys and undulations in the garden ; and each slip has been a giant catastrophe to the smaller creatures that are constant to narrow winter quarters.

A curious example is the collapse of the roots and boles of one of the elms which were blown down in my paddock in the great gale of March, 1916. It fell away from the stream and ever since the once-horizontal root system has stood up vertically as a sort of wall to the river. It has been very popular and populous, because preserved from decay by a few relic roots. A king-fisher has usually found a hiding-place on its arrival. Though it did not roost there it frequently disappeared into one particular hole, and was often seen round about. Both wrens and robins had a peculiar fondness for this place, and built on it. The root was full of mice holes. Bumble-bees hibernated in it. It seemed immensely solid. But the river rose and rose. Rains hammered on the bank, and a slight frost followed. The foundations weakened week by week till the bole could no longer hold itself in position, and one morning it fell back into its original attitude, making a considerable island in the brimming stream. It revealed in its fall an old wasps' nest, and doubtless some of the queens were snugly hibernating in it when the calamity befell. The general casualties must have been enormous.

Wet in general, apart from such particular catastrophes, is probably the most mortal enemy of the winter slumberers, at least among insects. Frost they enjoy, and sleep the sounder for. But wet brings discomfort, and with discomfort cold. It percolates into the chambers smoothed out by the bees, and fills them with particles more irritating than crumbs in a bed. It drowns the eggs of the single bees, such as *Andrena Rufa*, buried six inches below the surface of the path.

It softens the cases of the cocoons and even alters their colour, leaving them much more visible to birds. It washes off the eggs cleverly glued to bits of vegetation. It loosens to the point of collapse the gaping bark of fallen timber that is the first favourite among spiders, earwigs, woodlice, centipedes, and even queen wasps. Though some creatures rejoice in much moisture, excessive wet is a general enemy. One may hazard a conjecture after any wet season that the coming year will be conspicuous for the paucity of the hibernating species of insects, and the multiplicity of rats and mice which breed earlier and in greater profusion in warm and wet seasons.

Any disturbance is bad for the winterer, and leaves her often without resource. Instinct seems to be more or less at a loss, in insects at any rate ; and even in animals of higher development you can detect the struggle between winter inertia and the instinct of self-preservation. I found this week a frog ensconced beneath the congenial hollow of some half-buried broken crockery. He was peculiarly unfortunate in being disturbed when the sun was shining, and obviously hated the light as much as the compulsion to move. But something had to be done, so he crawled, rather than hopped, down the pathway of the shadow of a pear tree, till he came upon a clump of cocksfoot grass into which he could wriggle. It was too early—about three weeks too early—to seek the river and begin the spring life, though he bore no signs of the discolouration that sometimes results from hibernation. A toad used always to hibernate on a sort of shelf in a hole made by a tennis post and I found a dormouse in the top of a beehive.

Mice in the garden have been spending the winter in various well-selected nooks. Two selected the low but spacious hall under a fallen piece of rent oak paling which lay agreeably alongside some hazels that had borne heavily. The lodging, apart from structural

advantages, offered the shortest possible portage for the fallen nuts needed for winter food. Two other mice, very lively and very tame, as their way is, had preferred a heap of wood-ash and half-burnt sods that were left from an extinct garden bonfire. A number of animals—and, indeed, some vegetables—have never relapsed at all into winter habits. The worms have been near the surface continuously—to the great benefit of the thrushes, which have sung proportionately to the satisfaction of their appetite. On level lawns there were worm casts throughout January. Nor have the moles, which always choose the same strata as the worms, descended. They are now ploughing up the grasses at the edges of the flooded meadows at a speed that would do credit to a tractor.

It has been sometimes said that the landslides in wet seasons are partly due to burrowing animals; and rats, at any rate, are peculiarly fond of railway embankments. But the drainage they supply probably more than compensates for the breaking of the continuity of the soil. However this may be, some plants have a very definite influence both in loosening soil and in holding it together. Where nettle roots are there the soil is loose, though the roots themselves are many and tough. On the other hand, docks in a bank run such stout roots down to such a depth that they should vastly increase the cohesive grip of the soil. Has their multiplication ever been attempted, say, by a railway company cursed by the threat of sliding clay?

THE FIRST NEST

THE first nest in the garden—and the garden is always preferred before the field—is a blackbird's.

Feb. 24 It is built within six inches of last year's site on the wall of an open wood-shed. Last year some sort of concealment was pretended by selecting a part of the beam where a bunch of ripe onions was suspended from a nail. This year the mass of rough bents, grasses, and even bits of stick, looks as if it were specially designed to catch the eye. Any nest is ingenious in structure, even a sparrow's, which is the least shapely; but this is chiefly remarkable as a display of "hedge-carpentry;" and it has very much less cement in the form of mud than is common. For blackbird, as well as thrush, uses mud, a material common to the tribe. I have watched that handsome Transatlantic thrush which we call the American robin soak each successive bent or straw in a wet muddy solution before fixing it in place. It is not so much the interior cup—which is largely of mouldered wood—as the base that is muddied, even by our song thrush. In this rough blackbird's nest a few of the bents hang down six inches or so, and the whole nest projects some bit over the edge of the beam.

The date is very early for the blackbird. In my bird-nesting annals, the earliest discovery was a robin's egg in January. The nest was built in the ivied wall of our rectory close against the front door. The bird was watched at the work of building and on the 30th she laid her first egg. Almost always the thrush and missel-thrush anticipate the blackbird, in building as in song. Can it be that the discovery by this particular pair of blackbirds that an indoors site is available has suggested the corollary that the seasons may be anticipated? The pitch was chosen last year,

or so it was thought, because the spring was abnormally late, and therefore concealment hard to secure. This year spring is abnormally early ; but the older habit persists. Other early nesters are fond of a roof over their heads, and, if they can find it, pay little attention to the disturbance of a human neighbour. Two delightful robins' nests come to mind : one built on the bookcase in the study of a man of science at Rugby school : the other in the studio of a small country house by Wormley, in Surrey. This last pair of robins virtually lived in the studio for several years. The end came when one of the old birds was killed within the studio by a too militant son. Several of our birds are tamer than the blackbird, but the hen bird, at any rate, discovers a new courage at nesting-time. I used to visit one blackbird in a Surrey garden and stroke her beak and the top of her head with a twig, with as little thought of her flying away as if one were scratching a pig in the sty with a walking-stick. Linnets and robins may be persuaded to take food from the hand while on the nest, but I never knew quite so approachable a bird as that Surrey blackbird.

The dates when different species begin to think of building and when they actually begin are widely separated. A pair of blue tits in the garden have been singing and have been in and out of the slit between the bricks, where they will build, every day these six weeks ; but so far as the negative evidence goes they have not yet begun to carry building material. The rooks were quite busy with their nests in early January but then they are one of the very few species who keep a permanent nest, a house that needs repair and may go into dissolution if tinkering is postponed. At the other extreme the partridges, which virtually make no nest, paired most punctually at the opening of the close season, though there were a few precocious pairs weeks earlier. The dunnocks (a name that steadily begins to prevail against the old misnomer

hedge-sparrow) paired and began to sing about the same date. It is a very old country belief that the great pairing festival is St. Valentine's on February 14, and though there are more exceptions than examples, we see some cardinal changes about mid-February. The Latin name for the chaffinch means bachelor, given because the gaudy males do not in winter associate with the dingy hens; but the neighbourhood of St. Valentine is fatal to this notorious segregator. He sings to-day "on the orchard bough" a love song, very clear and eager, but brief and condensed, like the most popular form of Japanese lyric. And as the species multiplies it nests earlier and earlier.

In the chronology of nesting, what species would head the list? It would begin probably, though the authorities differ as widely as personal experience, with these names: Crossbill, raven, mallard, water oozel, rook, robin, thrush, missel-thrush, blackbird. And end, after several hundred names, with the cornbunting. There is one disused brickyard in Norfolk where the buntings have nested year after year in late August; and that is no rarity.

THE STRUGGLE TO AWAKEN

Nor winter, but spring, is the hard time—glorious, but difficult. Τὸ καλὸν χαλεπὸν: il faut souffrir
 Feb. 26 pour être belle. The gaiety, the excitement, the new splendour are achieved by a struggle unparalleled in winter. The supreme gift of winter is sleep. We do not appreciate its value in temperate England as did Scott's party in their first winter quarters; but even the buds must feel some touch of that emotional gratitude to sleep described most persuasively by Mr. Cherry Gerrard in *The Worst Journey in the World*. It compensates for every hardship, whether for the bat, hung up like a bit of derelict

leather on a slat in the barn roof, or a chestnut bud sealed in a leather case, well caulked with gum, or a wren packed with companions in an old nest, or a mouse curled up in his hole within smell of his food-hoard, or the sepia snail and spider and wood-louse lying motionless together under the loose elm bark ; or the dormant seed or biennial root-stock quietly slumbering till the summons wakes them.

The trouble begins when the signal has sounded, the signal given by a more upright sun and prolonged light : and the patient world takes on impatience. The wonder is that life wins the struggle. Not once, but several times of late the snowdrops have wilted and collapsed, and the leaves of the kexes lost colour and stiffness. The biting frost seemed quite to have cut short their glory. But it was not so. Those who sat at the bedside of any particular snowdrop or chervil plant saw, to their amazement, a complete recovery. The flat, flaccid stalk or stem regained its stiffness, and colour returned to the dusky leaf. Pippa had passed.

The mixture of softness and hardness in many plants astounds you. Here is a bluebell, with a rosette of green points holding up a hard, heavy crust of native cement, compounded of earth, flints, sticks, old leaves, and ice and hoar-frost. Day after day it has pushed it up, at last broken it off, and will presently thrust it aside or break it up, without so much as blunting the tip or fraying the edges of the delicate leaves. The miracle appears more miraculous the more carefully you study the instrument. A bleached stem of infinite softness and vulnerability joins the point of the head to a bulb that, year by year, has pulled itself lower and lower into the soil of the spinney, so low that it defies the bill or trowel of any marauder.

Yet softer, and you would say less capable of fighting the hard resistance of inorganic matter, are the blades of wheat. Across the tiltb they stretch as even and

unbroken as the lines on a sheet of foolscap. Your foot hardly indents the stubborn soil between the lines, which is as steel compared with the leaf-mould of the bluebell spinney. But you will find no gap at all where seeds have failed to germinate or penetrate the iron surface. "Of myriads brings but one to bear," is not true here, nor even the first version of the earlier edition: "Of fifty brings but one to bear."

Yet more triumphant than any seed or bulb are the plump root-stocks of kex and dock. All those who have used a spade and noted at all what it turned up are astounded at this season to find green leaves far below the surface, emerging from the top of some buried root. They seem to rebut the doctrine that only the sun can manufacture greenery. The leaves appear to have extracted the colour from sunlight stored in the root from the year before. As for the dock, bury it deep or let it lie on the frozen surface, cut it in half or throw it on to a garden bonfire—it is all the same. When the summons comes, out thrust the strange, slimy purple leaves, which will remain in vigour till all the store of other summers is quite exhausted.

It may snow, it may freeze. The enemy "faints not nor faileth," but life wins. The rabbits may be forced to climb for their diet of bark, the mouse to travel to the village hencoops for his meal, the blackbird to half-bury himself in the old leaves, the birds may hold themselves back a little and the seeds remain in the tomb as the mother wasp in the crevice; but the cold has no mortal mastery, boasts singularly few victims. In the midst of the week's snow the elms are gold and purple with flower, the floor of the woods starred with anemone, primrose, bluebell, kex, cuckoo-pint, and dog's mercury.

In a February frost no malice lies. Some would go further in its praise. I heard this week the pronouncement of an old man of science who lives in one of the

coldest of our Eastern counties. He is in his ninety-seventh year ; and he said, " All the best seasons on the land follow a hard February."

OIL ON THE WATERS

ON the coast of Hampshire this week the guillemots were being killed in numbers by refuse oil ;
Feb. 27 and on the beach were heaps of black half solid stickiness out of which birds' skeletons stuck.

Such spectacles are scarcely endurable. The pollution of the waters of the sea that girdles Britain has gone further than the most highly exaggerated of all the lamentations suggests. Wherever we go down to the sea on the South Coast, the silver of the girdle is tarnished to an unpleasant iridescence. Hard metallic tints of green and purple and yellow are reflected from successive scums of oil. The Dart, to give one example, often looks like a roadway outside some trysting place of motors that have dripped and oozed at their leisure on to the tarry surface. Vehement protests have been heard from naturalists and humane observers on all parts of the coast who have watched the seabirds first shackled and then killed by the fouling of their feathers, from shipowners who are a little conscience-stricken by the damage the new fuel and more extensive oil freightage has left in its wake, and from the more general public who yacht and who bathe.

But scarcely any one has exposed or investigated the evil influences of this waste oil on the bed of the sea and on the vegetable and animal life it supports. Something has been done unofficially by yachtsmen in the Isle of Wight, and their findings are ominous. The symbol of the calamity is a great piece of stone, broken off from a solid rock only approachable at low tide. It has been turned a dirty black colour by the

deposit of oil-refuse that has undergone a sea-change into something very far from "rich," though happily strange to the place. Such a black layer is spread over the floor of the sea in this and other bays ; and it is not, in Bacon's phrase, "fast of its colour." The dye comes off on the soles of the feet of the bathers, and quite destroys all the pleasantness of the recreation. What effect it has on the fish is not yet proved ; but fishing experiments also have been made, and where many fish were, none is left. The indications are that the more highly prized species have altogether abandoned their old haunts. The substance, which much resembles tar in outward appearance, is probably as injurious to inhabitants of the sea as is road refuse to the more delicate river fish. Experience as well as scientific test have proved that a very small percentage of tar in the water may kill trout, by direct poisoning as well as by destruction of their food. It is as certain as may be that a coating of black oily matter over the rocks and stones would banish all fish whose habit it is to frequent the bottom of the sea. And the offence would be cumulative. The black deposit will spread and thicken, quite destroying weeds along with the animals and animalculæ that lived among them. Expert official inquiry by chemists and marine biologists has become an urgent practical obligation.

This danger has been generally disregarded, partly because the oil on the surface is a more immediate threat ; and the appeal to our sentiment is overwhelming. A gull caught in the oil touches the deepest misery that its nervous system allows it to plumb. Mammals and birds both can endure pain with admirable fortitude. They may recover from very serious maiming because distress seldom suppresses their vitality or at all limits their sense of self-protection. The curative powers are strong in their bodies and give confidence. The gull that has swum into an oil patch

has little or no defence. The efforts to clean some feathers further soil the rest. The birds lose their power of flight and have no moment's rest from the Nessus shirt in which they are wrapped. A bird such as the black-headed gull—the species best known to Londoners—does not naturally live on the water, and if it loses power of flight, while swimming in an estuary, inevitably starves. It is difficult to assess the number of casualties among the birds on our coasts, but all along the South Coast and in the harbours of both East and West Coast the gulls are continually dying of the effects. You can see them caught. You find their dead bodies. Some few are poisoned by it. Some are drowned. Some are starved. Some are killed by their enemies. While such conditions prevail at home, we cannot with any clearness of conscience protest against cruelties to animals in alien fields.

How far a complete remedy for the nuisance is available, no one is quite sure; but every one who has gone into the question knows that it may be abated by very simple regulations. Doubtless theories of the cause are numerous. Some hold that the worst excesses are due to the belated escape of oil from ships sunk during the War. There is some reason to believe that the quite extraordinary drift of thick black treacly refuse on the Dover beach—where it was scooped up in buckets and burnt, both on the shore and on water—was outside the control of any authority. It is tolerably certain that many tons of oil lie on the bed of the sea, and all of it must be released as chemical and mechanical action eats into the walls of the tanks or reservoirs of the sunk ships. Some belittle the inferences drawn from the iridescent surface of the waters; and it is, of course, theoretically true that oil tends to spread itself thinner and thinner till the film becomes so tenuous that a quart or less may suffice to cover acres. But when all concessions are made, it remains abundantly clear that merchant

ships, ships of the Navy and oil tank vessels all discharge a certain amount of oil and refuse oil on to the water. The one provision made against the practice is contained in the Oil on Navigable Waters Act. If it were faithfully obeyed, as it probably is not, it would still remain quite ineffectual, as it only forbids the ejection of oil within the three-mile limit. How miserably inadequate that interval must be any one who has either experienced a South-west wind on the South Coast or sailed down the galloping current of the Sound will easily understand. The refuse might reach the shores of the Isle of Wight within a few hours. Much more drastic regulation is demanded. A very strong and representative committee of ship-owners and others professionally concerned with shipping recommend definite legislation. Their view is that the cruder oils, which are contrasted with the less harmful lighter oils, should not be "enlarged" nearer the coast than 150 miles. The need of so wide a margin of safety points to the necessity of international regulation, or at least the preaching of an international etiquette or moral *jus gentium*. The sea is a common possession. But while this most desirable consummation is being reached, our British men of science as well as our sailors may each serve a useful and humane end by an investigation of the history of the oil after it appears on the waters. How far does it evaporate? How far is it deposited? What chemical change does it undergo? What is the best treatment of it?



MARCH

FOR nearly a thousand years March has been known in Britain as the "month that blooms the whins." The whin, or furze, or gorse, whichever name is preferred, blooms most of the year; but first in March the commons or hillsides take on the gorgeous and golden splendour that is said to have brought the great botanist Linnaeus to his knees. Yellow-gold is the colour of the month. Daffodil, coltsfoot, aconite, marsh marigold, buttercup, and dandelion are all of the same hue. But the gorse is the one bush that colours the British landscape as the wattle colours the Australian.

According to the calendar, which is a little behind the season in some respects, spring begins on March 22nd. Yet the date is apt enough. We usually see the arrival of the first of the little birds that come to England to sing and build. Such tuneful birds as the willow warbler or blackcap are dumb except in the early spring months, of which they are the laureates. Those that come to England sing only in England. It is worth noticing that in the annals of naturalists the frogs, which have crawled out of muddy sleeping places about March 1, are chronicled again and again as depositing eggs or spawn punctually to the first day of official or astronomical spring.

Yet by this date some of the proper spring work is already done. Most tree catkins have already faded and underneath the poplars the ground is often crimson with their spilth, as under the hazel it is yellow. In my neighbourhood the balsam poplar especially

flourishes, and as the catkins fall the scent of the young leaves first becomes perceptible. The flowers have fallen before the leaf buds show any signs of movement. Among the most widely quoted of Tennyson's quotabilities is his line :

"More black than ash buds in the front of March."

It is true. The ash buds are as black as the briar buds are green or the blackthorn flowers white. Nor again are any lines of Shakespeare (from whom Tennyson took half the line given above) much better known than his reference to the primroses which—

"Come before the swallow dares, and take
The winds of March with beauty."

Every one harps on the winds of March, though the later weather experts are apt to deny the existence of so-called equinoctial gales. Most cultivators welcome the winds when they come, because one of the chief virtues of March is dryness, and nothing dries the soil better than wind. "A peck of March dust is worth a king's ransom," because half the world is anxious to put seeds in the ground—from the farmer who sows barley or spring-oats to the cottager busy with his vegetable or flower patch or his allotment. A characteristic picture is the great colony of rooks' nests swinging to and fro high up among the flowers of the else-naked elms, while the birds who are not laying or sitting on eggs are "blown about the sky" in a fine abandon of flight. Though seasons differ in water and on land, and autumn may be called the fishes' spring, the fish begin a new activity when the green points of the reeds first push through the mud. They grow greedy as the flies and insects are hatched, and fishermen open their season on the bright chalk streams of Hampshire. It is odds that they will see the first swallows before the month is out.

" Nature shall thrive with new delight,
And time's relumined river run
Warm as young blood ; and dazzling bright
As if its source were in the sun."

So wrote Tom Hood, a poet never yet appreciated as he should be. He wrote delightfully of spring and his *Ode to Autumn* is only inferior to Keats'.

THE DAFFODIL MONTH

WE are never without flowers in England. In the Isle of Wight and in Cornwall roses bloom March 1 in every month of the year, and last December, for instance, some of us plucked a bowl of them to adorn the Christmas table. That most un-roselike flower, the so-called Christmas rose, is always true to the date in its name. Primroses and primulas are to be found in spinney and garden from December to May. Very soon after the year opens a number of both native and exotic flowers open : cyclamen, hepatica, winter jasmine, Daphne Mezereon —beloved of cottagers—aconite, coltsfoot, snowdrop, the dwarf crocuses, squills and chionodoxas with odd blooms of single arabis and aubretia. The hazel catkins shed their yellow dust over the little crimson stars. The tassels on the poplars are purple, and purple grow the distant woods. Colour spreads like the approach of dawn ; and who can say exactly, as in an almanac, when the great change begins and colour rises distinct above the horizon ?

To most of us perhaps the sense of spring hardly comes home till the Lent lilies flower on some early day in March. Earlier we have enjoyed sudden accesses of pleasure in a clump of snowdrops in the garden or a patch of coltsfoot in the field ; and wondered at

their unexpected powers of resisting cold. Some careful physicist discovered that the hanging bell of the snowdrop, especially the single, held a drop of air two degrees warmer than the surrounding atmosphere. Not till the thermometer was thirty degrees did it freeze within the bell ; and it was warmer yet in the snug nursery where the seeds were born. The coltsfoot, which makes splendid deep yellow masses of colour in the very barrenest places, braves the season quite naked. Not a leaf is in sight and the flower star is held erect to receive the slings and arrows of whatever tempest blows. But the enwrapped stalk is proof against frost, as the vulnerable crocus is not. No flower is more surprising. It looks as if it had been set there by careful fingers as flowers are set in an indoor bowl. Spring in some regards has curious analogies with autumn, but if a contrast between the two seasons and the mood of the two seasons is needed, compare the blotched and dirty leaves of the coltsfoot on a muddy stubble in October with these elf-like blooms of early spring.

But the coltsfoot, the wild primrose, or the violet, or any of the February flowers must be sought out, except in gardens ; and even there the massed crocuses and snowdrops are humble and low in the stem. The daffodil is the first trumpet of spring—and more than ever trumpet-like as the fanciers enlarge and heighten its glories. Such varieties as the Emperor or Empress grow tall enough for a middle place in a herbaceous border in summer, and the central tube is so long and opens so wide that it suggests a comparison with the angels' trumpets in mediæval pictures. But the biggest, as the smallest, derive directly from the Lent lily, the native wild flower that inspired Wordsworth, as he saw them " shifting the light " in a March wind, and must have delighted the eyes of Tennyson every year of his later life. Indeed, the flower seems to have peculiarly close connection with men of letters. If

any one should wish to make pilgrimage to its headquarters, two shrines may be named: one is the paddock in front of Lord Tennyson's house at Freshwater in the Isle of Wight, the other Mackery End in Hertfordshire, where the flowers have massed themselves round the aged trunks of Spanish chestnuts in a paddock close beside the farmhouse celebrated in the Elia essays. The devices by which all plants force themselves through the earth and stones and—worst barrier of all—matted grass, are many and curious, but the daffodils have the best instrument. The crocus flower has an evenly rounded point. The coltsfoot's "thousand arrows" coalesce into a blunter but harder tip; and in general perhaps the flowers have a more aptly devised instrument than the leaves for forcing their tender cells through the rough soil—*per aspera ad astra* But the daffodil is an exception. Its flower is pointed and well protected, but the leaves do the work. They are flat and almost welded together like the blade of an American axe. They "hail fair summer" not so much with a lifted spear, if one must be precise, as with a lifted knife-blade, and expanding as they reach the top force the earth aside, without suffering so much as a bruise. And they penetrate even when the edge is turned. In all the gorgeous descendants of the Lent lily is to be found no single virtue not decipherable in the wild ancestor, humble though it is. The virtues are underlined; that is all. The trumpets and petals are enlarged. The soft gradations of tint between white and orange are more abruptly separated. Even the dashes of red, that make the glory of such varieties as *Barri conspicuus*, may be found occasionally in the wild daffodils—the poets' and botanists' narcissus—that abound throughout Europe.

Here and there in England grow lusty clumps of the double daffodil; but the pure shaped single flower—of snowdrop and of snowflake as of the narcissus—

always precedes the double, and we may safely conclude that these are vagrants from a garden or the harvest of the efforts of some flower-lover, who had consciously enriched the wild. The number of such benefactors is indeed becoming so large that future botanists will have even more trouble than we have in distinguishing the native from the alien. We live in so kindly a country that the most distant strangers become at once at home. Who shall be sure to-day whether the greater celandine, the dusky geranium, the snowdrop or the double daffodil are alien or native, or at what date the naturalisation began?

THE GRAY SQUIRREL

GRAY squirrels, of the variety imported from the United States, have just appeared in one March 4 of our Hertfordshire spinneys not more than twenty-five miles north of London. They have probably migrated from Regent's Park, though it is just possible that some strayed a few years ago from the Duke of Bedford's park at Woburn, where they were at one time naturalised, and these are the descendants. They are pretty creatures—as popular in Regent's Park as in Albany or any other American town, where they swarm. It is a little curious that the place where they were seen this last week is peculiarly populous with the small owl that Lord Lilford and others brought from Spain. It will be a pity if the squirrel establishes itself as the owl has. The Duke of Bedford was most reluctantly forced to do away with his squirrels because they were proved to be mortal enemies of the nesting birds. Even in America the chipmunk, which roughly corresponds to our brown squirrel, is preferred before the gray. His friendly inquisitiveness is singularly engaging. He

slips along the fences at the edge of the road as you walk, playing hide-and-seek with you, and delays many a pedestrian, tempted into accepting his challenge at the game. One would find it hard not to welcome the chipmunk, and there seems no good reason why our squirrels are so much less tame and common. But it would be more than rash to fill the gap with the more powerful gray species. Naturalisation (though it was the original object of our Zoo, where a beginning was made with the guinea-fowl) is a dangerous practice, at least with any animal, bird or mammal, that is in any measure carnivorous—as is even our own squirrel on occasion.

The little owls spread themselves at extraordinary speed and very thoroughly, as was not surprising. They have no enemies but man, breed freely in safe places, such as hollow trees and, since the supply ran out, rabbit-holes, cultivate evasive cunning, and are omnivorous. Beetle, mouse, and bird are all grist to their mill. In one of the neighbouring woods the keeper holted seventeen from rabbit holes in one afternoon's ferreting. No mammal is at all likely to extend its range at such a rate or so thoroughly. Nevertheless, the mammals migrate farther and more frequently than we commonly think. Most have their little migrations—like the Vicar of Wakefield from the blue room to the brown—and again like him, many are forced into greater ventures.

There is one game covert in a district many miles from any known badger's haunt, where just now and then a single badger appears in the course of a longer journey, though in general his tribe is the most faithful of all the animals to a particular home. This badger behaves very much as some of the wild boar in France. There is a wood, for example, some ten miles from Boulogne, where boar appear at very wide intervals of time, and have been known to travel thirty miles at a stretch to reach it. Our long-tailed field

mice do not quite emulate the field mice of Australia, which on occasion advance across country like locusts, devouring not only all available food out of doors, but eating houses out of their mattresses, candles, soaps, and even carpets and chair-seats. But ours, too, play the invader. During the stress of weather in recent months a good many houses have been entered by quantities of both the long-tailed field mice and the short-tailed voles. One house was alternately invaded by the long-tails and the short-tails. Again last summer rats were traced in an exodus from some of the Midland towns very much at the same time as the sparrows. They adjourned for harvest, selecting that date for their summer holiday. Last autumn, as in most autumns, shrews were found dead along a trodden path on a Hertfordshire common. My belief is, though evidence is very hard to acquire, that this little, secretive, fierce, hedgehog-like creature travels long distances at certain dates, undergoing the sort of instinctive compulsion that will drive the Scandinavian lemmings straight across country, even into lakes and seas, in a mania for travel. Otters have been known to make fifteen-mile points of their own volition; and even their favourite prey, the brook eel, unendowed with means of land travel, will make across country when the hour for its journey to the Atlantic depths strikes in its muzzled intelligence and a damp night gives opportunity.

The eel and the squirrel are hardly akin, but the general analogy holds that those animals are ready to move considerable distances and to extend their range. On very little encouragement gray squirrels would become a common object of the countryside throughout England. As little as five or six years might suffice to populate the south-eastern and home counties. It is as well to be on the watch and to make up our minds whether or not we want the gray American squirrel. England has few mammals. Several have disappeared

within the last generation. The ermine and the polecat and wild cat have quite vanished from old haunts. The stoat is much rarer and the brown squirrel quite hard to find where once it was common. The gray squirrel would be an amusing neighbour; but in the one country place where it had multiplied its curiosity and morbid appetite wrote its doom.

SOME SANCTUARIES

BRITAIN, especially England, is on the way to become a tissue of bird sanctuaries, a comb of March 8 breeding-cells. Within last week two new reserves were secured—one in Gosforth Park, outside, very nearly inside, Newcastle-on-Tyne; the other along the cliffs of the Isle of Lewis. A week or two earlier Lord Grey, who himself long ago created one sanctuary and helped to secure others, collected the money for the purchase of one of the Farne Islands where the Sandwich tern multiplies its lovely race. May we nourish the hope of yet another on the coast of South Wales? At any rate, several letters from bird-lovers who would like to take action there have reached me, and no place is better fitted. Ramsay Island, where heather grows five feet high, where the ravens nest, where the seals assemble in scores in the caves, deserves all the reputation earned by the Farne Islands or the Norfolk Peninsulas. Mr. Buxton's gift of Hatfield Peverel must be added to the list. All these are instances so modern that they belong to the first three months of this year. "This England" is more than ever worthy of the best-selected pronoun in literature.

A special rejoicing is due over the retention of the really adorable lake in Gosforth Park. A great stretch of this part of Newcastle has long been a half-natural,

half-artificial sanctuary. The main cleft of Jesmond Dene has many of the qualities of a wild country. The roots of the trees thrust out from the slopes with almost a Doré grotesqueness ; and the water absorbs the reflections—if such a direct contradiction in terms is allowable—so that it seems compact of trees and leaves like the still pools of deep woods. Birds are plentiful at any time, and both summer and winter migrants stop there for varying periods. Is any town in England so well served ? The Gosforth Lake is to be reserved principally for the sake of harbouring various duck ; and its owner "should hit what he aimed at." My experience is that no race of birds is quicker in response to attraction than the ducks and geese in all parts of the world. The most salient example (to which I have referred before) is to be found on a patch of ground on the Canadian side of the frontier opposite Detroit, to which crowds of migrating geese were drawn within two years, so effectively was the offer of protection advertised among them. Duck and swans and many other species flocked as quickly and in much greater numbers to a lagoon sanctuary just outside Rockhampton in Queensland—a place fit to be a naturalist's Mecca. One of the ponds outside the Abbey at Woburn is so beloved of wild-fowl that as you come upon them suddenly you can scarcely believe that the sight of such an assembly can be true.

Both the sanctuaries bought within the last week are gifts from the generosity of sportsmen, one a famous punt-gunner ; and punt-gunning is the most wholesale method of slaughter practised within the British Isles. Man is compact of contraries, even of contradictions, that no wise person would attempt to reconcile. Enough that it cannot be denied that happy sportsmen exist as well as "happy warriors" ; and that their "master-bias leans" to the gentle scenes of the sanctuary. It is almost the normal

development of the Englishman that, as his years of the open life lengthen, he acquires a sort of mysticism, and at the last extracts the same sort of zest from preserving life as in his flaming days from taking it. But the two zest, for all their opposition, can exist together. It is not often that the one dies suddenly when the other is born, as in the case of Richard Jefferies. But *The Story of My Heart* quite naturally follows his days with the gamekeeper. There flourishes to-day a Suffolk squire who suffered this Jefferies change and at a definite moment decided to shoot no more; but he still confesses to a strange thrill when he sees partridges fly high over the elms and knows that the old skill in destruction has not deserted him. "Tom Tulliver was very fond of birds, that is, of throwing stones at them." How many of us are vulnerable to that shaft?

Let it pass. A debt is owed both to the sportsman who is making a sanctuary of a cliff line in the outer Hebrides and of the lake and island in Gosforth Park. The half-urban sanctuary has peculiar virtues, if less interesting to the pure naturalist. It helps to teach the wild race of birds that mankind is not an enemy, but a friend. "What every robin knows" and most black-headed gulls and blue tits and sparrows, becomes common property, extending even to mallard, teal, and widgeon, whose proper haunt was once the least accessible mere and marsh within knowledge.

A SUSSEX SPRING

EVEN in a very late year, the official date of spring has precise justifications. The frogs this March 20 season have gone down to spawn punctually to the normal date and on every hedge-row side the posters proclaim the season. We begin late, but at last, to see, hear, smell, and touch

Spring, and to share, perhaps in the new energy that comes in the wake of higher suns. At any rate, we have Milton's authority for it that to man, as to black-birds, the power of song returns, emerges out of forced silence, with the arrival of the summer solstice.

The winter has been very long. March has reached the half-way mark before "blooming the whins"—said in the days before Chaucer to be its proper task—or raising the "peck of dust." It has played neither the lion nor the lamb, but just repeated winter. The rooks nesting in the high elms miss the gold and purple flower that should surround them, and we can scarcely catch the empurplement of the woods, always visible long before the elm-flowers have burst. Gardeners and farmers have not dared to sow or transplant, while the ground passed from iron in the morning through sticky thaw to iron in the evening. The sun has set red in a mauve mist announcing wintry frost, past and to come, and Venus, very glorious in the evening, has sparkled on rime crystals, silvering the grass. The commons have been subdued into a strange monotony of brown and gray. The ling looks dead; the furze has not a touch of gold; the grasses are without colour. We have longed for spring as they long for it in countries farther north, where it arrives as suddenly almost as on the almanac, and takes its place as an event of such-and-such an exact date.

In early morning, when the sunshine and the wind come from the same direction—from the east, with its unvarying *aliquid amari*—we might still augur winter, but by midday we have known that spring was with us, whatever "touch of bitterness" remained. Some of us saw it come in a little country parish with a touch of, not of bitterness, but perhaps of pathos. On a green grave close by the path across the church-yard had been placed a rather splendid bunch of spring flowers from more southern lands. The bees that had

ranged vainly for native flowers, descended on the bunch from the church roof where they have flourished this long time, and have slept for six dull months. They came in such numbers, with such loud murmur, that passers-by stopped, one after the other, to see what the clamour might mean. Some, perhaps, found in it a symbol. Let that pass. It is enough that the bees persuasively proved that the world once again doth

" Like a snake renew
Its winter weeds outworn."

Herein, too, lies a practical suggestion for gardeners. We feed the birds. Why should we not feed also the bees? Lamentable numbers have died this long winter for want of food enough in the hives; but the food in mind was out-of-door, floral food. Hives should always be set close beside clumps of the early bulbs, snowdrops—which have enjoyed the longest season in memory—and crocuses and arabis and all the earliest blooms; and why should we not pay to the hive the ritual of setting bowls of cut flowers before it? The hive bee is much the most hopeful of the heralds of spring, wonderfully sensitive to the sun and warmth, out and about at the least encouragement, eager to anticipate the almanac as never is her lethargic cousin, the "irreverent buccaneering" bumble. Both Spenser and Wordsworth selected the hum of bees as a sound that lulled to sleep. It may be; but more certainly it announces that the sleepy world is awake.

The garden has become already a delicious place. I met this week a botanist—the most learned in the country—who has the habit of paying a round of visits to the rarer wild flowers that he has discovered. Another—probably the very best in England—spends a very great part of his retired leisure in travelling by car all over Britain to revisit his old favourites and find new ones. We all are fain this week to follow the

example within the narrow precincts of our garden. It is a liberal education to visit every morning, every evening the ribes, the forsythia, the lilacs, the weeping willow, the little south wall where the arabis and aubretia and lithospermum are hourly "plumping" and opening their leaf and flower buds.

How great at this season is the interest from a south wall or bank! The flowers on it anticipate spring; the sleepers on it awake a fortnight earlier. The spiders come and outstretch their long cramped legs; the queen wasp warms its folded wings into activity; the gnats dance before it; the bees coast along it. In the most enjoyable simple garden that I know, the owner—the epicure!—has two south walls, one under the other, and both on a south slope, smothered on the lower side with whins and heaths, some now in bloom; and for flourish a gray-stone rock garden at the end of one grass terrace agleam with hints of far-flung springs, between the dwarf junipers.

The slope has a charm for the first migrant birds; and this week or next week, if the usual tryst is kept, the rippling song of the chaffinch, the sibilant short sentences of the tits, the repeated challenge of the thrush, and the evening call of the robin will be joined by the laughter of the wryneck, the delicious cadence of the willow-warbler, or the double summons of his brother, the chiff-chaff. So comes spring to a south slope in Sussex.

THE FIRST OF SPRING

WHEN spring begins it is a proper occupation to go about to see whether the date is fit, whether March 22 our world obeys our astronomy, whether our plants and animals take any active interest in the sun's entrance into the sign of the Ram. A record of March 21 on successive years would give

some pretty comparisons; but I think we should be surprised as we collated the incidents rather at the punctuality of many appearances than at the divergences.

The eve of this year's spring is accurately very springlike. "Pat, like the catastrophe of the old comedy," come event after event, expression after expression, that belong to the opening of a new season. The wild Lent lilies have disclosed their trumpets and expanded the Elizabethan frill of their petals. Certain paddocks I know well are so gay with them that it is a query whether the gold or green prevails; and there is one clump of double daffodils also seeming wild. The children come home with sprigs of the "pussy willow," the brightest and most silvery of the sallows. The long catkins of the aromatic poplar are red and a delicious scent envelops the twigs. The first green leaves begin to dot the bare twigs, for though the silhouettes of the trees are stark, even on the flowery elms, you may find merry exceptions. The weeping Babylonian willows smile their green thoughts into the mirror of the stream—very populous with dace and sticklebacks. Sheltered bushes of the quicks, "burgeon," and most hedgerows are picked out with greenery of the dog-rose briars. The dog's mercury is very green in the woods, and the banks are half-concealed by kex and hedge-garlic. And spring is not less spring, but more, that frost has browned the tips of the more eager leaves. The season seldom omits the *aliquid amari*, which is indeed part of its excitement.

With plants you can scarcely say when exactly the flower opens, the leaf breaks. Animals make more sudden and more definite appearances. Since we are an island the arrival of the summer birds has a precise definition, for they come, as a rule, in battalions, not as single spies; and this year the first thorough-going definite incursion was in the week that separates the

first of spring from the opening of the close season. We so associate this annual armistice with game, that we are apt to forget that the date when the killing of birds becomes illegal is March 15, not February 2. It is a well-chosen date, because it almost always synchronises closely with the coming of the first warblers. Their punctuality is only less independent of the weather than the advances of the sun into Aries. Our diaries prove that ; but the years have their distinctions, nevertheless. This is undoubtedly a wry-neck year. They came earlier and are now present in larger numbers than the observers of them can remember, at any rate, west and north of London. Other birds have sweeter songs, but there is a note of laughter in the wryneck's gabble that is singularly pleasing ; and I find much the same sort of charm in the nuthatch's ripple which is almost the most continual of all the songs in some of the groves by the River Ouse. I doubt whether any of the rather rarer birds have increased so much in number and so much improved in tameness.

In general, the spring chorus has been in hilarious volume ; and in regard to it some of the professors have been developing theories which they call new. The latest argument is that these earliest songs are not in essence love songs at all, as some have dogmatically presupposed. They spring merely from the vitality that spring inspires. Some German has made a long analytic study of the formal and material and efficient causes of the song of the chaffinch, and founded his theory on the result. Well, the chaffinch was long ago called by Linnaeus the " bachelor " chaffinch. Those great congregations of dressy males—pink and white and blue and dapper—bubble into set song long before the dowdy maternal hens join their company or keep company with them, or before the two spend their delicate skill on the liehened nests. The thrush, shouting from his mounted perch to-day, sings the

same song he sang to November winds, though it is louder and a little more sustained, and lasts longer after sunset. The professor is right, but he might have spared himself the seriousness of making a theory of his observations. Yet it is a little strange that the males should be peculiar in their power of song, not only in birds, but in insects (whose "songs" are too little regarded). The male cricket has horizontal and vertical plates so separated and so controlled by cross-muscles that they can be, that they must be, rubbed together, as they cannot be in the female, though the difference of structure is very small. So it is with the syrinx in the throat of the birds. Why should the male beetle alone have the power of "song," and the female glow-worm alone have the faculty of showing a light?

A great deal of the pleasure of early spring for most of us has its origin in the acuter sense. As the sun has set any one of these spring days the western sky has glowed into tawny shades of red and orange, prophetic of frost. The atmosphere is itself visible, and indeed palpable, as the mist spreads. Through it and above it the trees stand more conspicuous in the twilight than in the sunshine, each species very distinct, however far away. The outward reach of the beech twigs; the recovery of the drooping ash twigs; the straight ribs, springing from one nucleus, in the wych elm; the crooked horizontal oaks; the intricate filigree of the planes; the fountain-like symmetry of the limes; the lightly-rigged black poplars—all express their individual structure as they never will when summer comes, and we notice them as we did not through the winter. At such an hour, sights and sounds and scents all impress us with unusual vividness. One could have sworn all last week that the thrushes, missel-thrushes, wrens, robins, and dunnocks were singing as loudly again as is their wont. As for scents, the poplar might have sprinkled the air with its balsam.

It is certain enough that at these vivid spring moments the larks and thrushes, if no others, quite refuse to obey the hint of the fading light because the feel of the air fills them with pleasure. If their song is a love song, that part of it is only an accident. The impulse is wider and fuller. They sing because pleasure is vocal.

In England one animal only is more punctual, if possible, than the migrant-birds ; and he has followed the almanac this year, as others. For nearly a fortnight the frogs (which seem to be more flourishing and more numerous than is common) have been moving with steady deliberation to the breeding haunts. It is odds that the spawn will be laid by a very large number exactly on the opening day of spring. A curious fact of natural history—which I once investigated with some care—is that the frog is more regular in its emergence from winter quarters than the toad. Normally the toad is much slower to respond to the call of the season, but now and then anticipates its date and causes much confusion, often many a tragedy, by foregathering at the same breeding-place as the frog. Both have now come out of their winter sleep ; and I have seen toads very deliberately crawling along the bed of the stream, as if the water were their sole medium.

BIRDS AND MAN

I MET to-day one of Mr. W. H. Hudson's biographers and heard almost simultaneously of the March 25 success of the scheme for setting up a memorial sanctuary in Hyde Park. London has certainly helped and may help yet more to cement the friendship, the growing friendship, between birds and man. Beyond question birds are discovering

that men are not to be extremely feared. The robin alights on our breakfast-room table, the finches flutter down to the sill when they hear the click of the window-latch, the thrushes hop in half-shy circles round about us on the lawn. The starlings are not more timorous of us than the Leghorn fowls. We may feed the hedge-sparrow on her nest if we move very gently. The black-headed gulls crowd into crowded London and will take scraps from the very fingers of their friends. Two wild duck of different varieties, *in defiance* of the descriptive epithet, have mated on the Round Pond in Kensington Gardens this spring. Quite certainly birds begin to enjoy towns. But for that "furred friend" of man, the domestic cat, they would nest in quantity in London. Every evening, if you stand on the south edge of Battersea Park, you will see scores of cats, slinking in furtive solitariness across the road into that very lovely landscape garden. Every season a certain number of duck are caught and killed by cats in St. James's Park. Every warbler's nest that an observer found in Dulwich over a series of years was finally violated by cats. If the cat danger is recognised and guarded against, even Central London may be charmed by the song of willow warbler, and even of nightingale and blackcap.

London is a natural stopping-place on the migration routes. Not once or twice the first warblers have been heard at Beckenham. Wheatears almost always pause for an hour or two or a day or two on Hampstead Heath. The swallows appear in great flocks along the river reed beds at Chiswick. It has been said, not perhaps less truly because fancifully, that small birds moving up the Thames in spring cannot resist the attraction of the almond blossom at the north-eastern end of Battersea Park. Chiff-chaffs and willow warblers have proved a passion for building in the southern suburbs. It is no wonder that many of our great naturalists have exulted in the study of

London birds; and in the list one must not forget the half-forgotten name of C. J. Cornish. He added immensely to the general knowledge of London, and if he had not killed himself by overwork between St. Paul's and Wellington Street, would have written a supreme history of bird life on the Thames. Jefferies, drawn to London, very much in the same way as W. H. Hudson, relieved the pangs of poverty, as Hudson relieved them, by long and faithful watching.

The verdict of the time is that Hudson, the realist, found the genius which Jefferies, the mystic, missed. Perhaps it is so. At any rate how the ghosts of both would like to think that Londoners could hear at their very doors the soft undulating song of the willow warbler or the bubbling energy of the black-cap's.

BEES AND POLLEN

UNDER my old easterly wall is a narrow bed very yellow with crocuses. At 9.15 (the hour, March 30 by the way, that brought up Kipling's romantic train) the bees come knocking at the doors, the shut doors, of the flowers. Some few, if they see a crevice, try to wrench the door ajar and wriggle in, but seldom succeed. They must be content to settle on an old bloom or two that have lost their sweetness and powers of movement. At 9.30, if the sun is bright the most easterly petal of the crocuses begins to bend a trifle about the point where the yellow pales into white. Then at accelerated speed the outer side of the petal shrinks and the whole is pulled down from the vertical almost to the horizontal; and the bed which was a dull yellow is brightened into a gleaming orange. Children who have leant their ear

"in many a secret place" can imagine that the creaking of the hinges is audible as the opening of the doors is visible.

The bees now swarm to the festival and have an easy ingress. You can see the black form through the almost diaphanous petal; but the excitement comes on a yet closer inspection. If you peer down into the cup, especially before it has flattened, you see how vigorous an athletic feat is the collection of the pollen. A hive bee does not flutter in casually, sip a drop of honey and let what pollen will stick incidentally to its thighs. The bee, watched closely, reminds one rather of the horse that used to work in our villages the circular chaff-cutters. Round and round it went laboriously, monotonously, till the straw was finished. The bee presses her head into the base of the cup and swivels round and round and round, sometimes ten or a dozen revolutions, scraping the furry thighs against every part of the anthers, acquisitive of the golden dust as any miser. Agreeably with the law that most things look a little more splendid before than after realisation, its very deep colour sinks to an almost pallid yellow when thus gathered. The thighs are coloured primrose after the visit. Of all the bee's activities this collection of pollen looks the most conscious and reasoned. It has none of the rather grim, mathematical blind precision of the composition of the cell. Some bees are clumsier than others—make heavier weather of it—and all look almost awkward. The pollen-gathering does not suit their build or mood so fitly as the honey-gathering.

Darwin's father and Lubbock and a host of their school have told us a thousand marvels of the relation of insects and plants. It all makes a pretty tale; but I would back the pleasure of watching one insect in the cup of one flower against the whole story of their scientific relationship.

" We only know what Nature means
Who watch the play behind the scenes,"

and such green-room visits are open to all of us who have so much as a yard of spring garden.

It used to be a spring habit of one of my neighbours, now a farmer, to go forth at this season with a large umbrella, open it, and invert it under any catkin-bearing tree. He was as sure of a catch as those fishermen, always to be seen on Boulogne harbour, who dip a circular net into the shallow and well-baited waters, and after short intervals swing it into the upper air, alive with silver fry. Into the boy's gingham fell along with the catkins a number of the earliest moths of the year ; and a number of moths anticipate spring by many weeks. They have been particularly numerous this March, in spite of frost ; and doubtless if the boy had maintained the ingenious habit he would have reaped a harvest of his favourite underwings or *Character* moths from sallows and willows—the favourite moth trees—and poplars and alders. But the collection of the moths was not the only threshing that followed the gathering in of his tree-flowers. It was his parsimonious custom to hoard the old catkins, for he found them well lined with eggs that hatched out into grubs that changed into moths.

I wonder whether Miss Christina Rossetti, who composed that much-quoted bar of adjectives, " curly, caterpillar-like, curious, green and brown," to describe the catkins felled by March winds—I wonder whether she had any notion what a nursery for real caterpillars her snaky catkins were. They are an arc of the circle that prevails in nature. The egg is laid in the flower, the hatched grub feeds for a little on the fallen remnant, before the migration and self-sought burial preceding the birth of winged and delicate moth that lives on the odorous air of night and the nectar of the earliest flowers. Very few of the very many who return home

at this date with sprigs of that sallow which we call the "pussy willow" suspect the presence of innumerable eggs in the silver flowers. It would be worth while to play the boy naturalist's game and preserve the twigs when withered. But let them remember that if they would see the circle completed the grubs after birth must have access to the earth.





"SHAKESPEARE'S MONTH" it might be called, as May might be called Chaucer's. He especially delighted in the description "pied," and "proud-pied;" and pied it is in all its habiliments.

"April, April,
Laugh thy girlish laughter;
Then the moment after
Weep thy girlish tears!"

The naturalist who keeps a calendar finds the April pages the fullest, because more events happen for the first time than in other months. Most migrant birds make their appearance: the first cuckoo and the first nightingale always come in April. In spite of the many claims to have seen a March cuckoo none has yet been officially accepted by the authorities!

Farmer and gardener are both busy sowing, but the straight lines of leaves from earlier sowings cheer us. The bees enjoy the first big honey-flow, and some of the earlier plum orchards are wholly white with blossom that has anticipated the leaves. and what is called blackthorn winter belongs usually to April not March. Many nests are built by the earliest of the visitors. We find the first eggs. Above all, April is a singing month. The blackbird wakes you at dawn. Thrush and chaffinch never cease while the night lasts. I have heard in a single garden towards the end of the month twenty-five different songs—and each at its best.

Almost all who have compared England with other

countries discover its most distinctive quality in the hedgerows enclosing the little fields. In April they clothe themselves with altogether surprising speed. The kexes—word beloved of villagers—make a green footing, so that the hedge briars look as if they were paddling. But the most characteristic flower of the month is the stitchwort, which has a neat and peculiar device of climbing, and hangs the hedge with its silver stars almost before you are aware of spring.

Perhaps the most hackneyed lines on the month were written by Robert Browning, who preferred Italy—except in April. He was not a very subtle observer, and picked as characteristic the “chaffinch on the orchard bough” and “the elm-tree bole in tiny leaf.” They are, in fact, the commonest bird and the commonest tree, and both announce their vernal beauties first in April.

Though Browning’s aspiration to be in England in April has the widest popularity—not undeservedly, there are better tributes; for myself I like Keats’s best of all

“ Hark !
'Tis the early April lark ”—

with the charming catalogue of events that follows.

THE SPRING SENSE

WHICH sense is it that sucks so great advantage out of these early April mornings, when the air April 2 softens and holds the sunshine in suspension, so that you feel it, almost taste it, even when the rays are cut off for a moment by some veil of cirrus or stratus cloud ? Perhaps different senses give the master-bias to the different creatures that bask in this ante-room of this annual golden age, this period of golden flowers : trumpet daffodil and Lent lily in the

grass, glazed celandine by the river, dandelions and the first marigold in the marsh, gorse on the common, primrose in the spinney.

Let me take one by one the inhabitants of my garden, which slopes south-east to the river, and watch where the enjoyment comes from in each. Obviously and certainly, the pleasure is real and is general, though in some of a rather negative and slumberous sort. The cat stayed indoors, hunched up on the sill of a sunny window, blinking narrowed eyes at the sun, but too contented to seek another favourite window from which, in the crueler mood of evening, she watches the blue-tits go in and out of a nesting-hole between the lintel and the wall. A slight movement and a low miaou invite you to rub the warm sunshine into the roots of her fur ; and when you have obeyed—as cats compel you—the comfort is so complete that she falls quite asleep for a moment. The spaniel ventures just outside the house and, looking like a Trafalgar-square lion, crouches on a hot stone and lazily watches more energetic but foolish beings weed the lawn or pick the long-stemmed violets that hold for him—it is conjectured—no apparent scent and no beauty.

The bees in the hive on the other side of the lawn were rather lazier than the cat. As you leaned your ear against their walls, you heard a contented murmur within the hive, a sort of purr ; but the sun was within an hour of its highest, quite directly facing the front door of the hive, before the first bees crawled out, felt the warmth of the alighting board, as dog and cat felt the warmth of stone and sill, and began to wander about the garden, like the owners of it, to taste the pleasure of the flowers. But they tasted more intimately. At noon they were rolling luxuriously in the gold bath of the crocuses, and sucking every drop of rare honey from the cushions of aubretia and arabis.

The floor of the orchard—not so smooth as it should

be, owing to the incursion of cocksfoot grass, making bushes almost like pampas—this rough part of the orchard was popular with frogs, some big and green and shiny like young leaves, journeying on seven-league boots towards the river; some still harboured under the cocksfoot, brown and dull and hard, like old bark, as yet unaware that spring had struck near a fortnight ago and, though the clock was a little fast, that the hour had really and truly arrived. They and the toads—which are still insensitive to April—are much slower in senses than the bats. In the evening a score or so of little pipistrelles (which have a gorgeous winter home in a big tithe barn—all oak and gloom and old tiles and spider's webs) zigzagged over the lawn and river with more than the hunting vigour of the owls hallooing to the misty moon in the isolated stackyard.

The best spring site in the garden is occupied by a thrush. She built on the fringe of an ivy tod clinging to a truncated sycamore. The nest is on the south side, overhanging the river, and the sun just flecks her flecked feathers as she sits there with steady eyes incubating the blue eggs. She must have built very quickly, for the nest seems to be scarcely half the normal weight, and is almost as untidy as a sparrow's on the outer side. But the eggs lie smooth enough on the wood pulp and the pair should be safe of the fruition of spring. A rat from the river is the only danger, and that is remote, for the nest is well away from the trunk, and on the overhanging side.

The ivy where the thrush nests is one of the very few plants that has not begun to express its pleasure. Even the old yews are this week pretending that they are spring-like and can show growing buds worthy of any deciduous bush. Tennyson peered less closely than he was wont—perhaps because he was unhappy, and unhappiness decreases vital energy—when he wrote of the old yew—

the naturalist's supreme O. P. As for the lighthouses off the east coast, they are so enveloped in clouds of birds, mostly willow warblers, that they obscure the light, as Persian arrows obscured the sun at Thermopylæ.

But these first stragglers, who come in many cases from North Africa, cannot yet face the east. The food they delight in has clean vanished. For the few days, when a south-west wind was vouchsafed, the pipistrelle bats, with the vast wings and minute bodies, were out and about hawking flies in all the home counties. Since then they have gone back to their beams in the barn, and relapsed into sleep. It is a huge old tithe barn with warm tiles on which the swallows and martins gather before they leave us. The warblers and swallows cannot adopt this means of defence. They must feed almost continuously or die, and some of them as a habit rely wholly on a few trees for their larder. The acacia, from which the chiff-chaff sings is altogether a bare choir. The black buds on the ash are scarcely darker than the twigs of the oak, the favourite of all the feeding-grounds. One fears for these early birds that they will find no early worms or their equivalent ; and suffer the fate of the early broods of duck or young swallows in a year of precocious frost. Happily Cornwall and Devon and Somerset (which latter seems to be the most favoured county by arrivals from Africa), the undercliff of the Isle of Wight, or the glades of the New Forest have a kindlier clime where the flies and small moths are abroad early and late ; and the very first comers may enjoy a *modus vivendi*.

And no birds set such store by cover as the warblers : the chiff-chaff, the willow warbler, the garden warbler, the wood wren, the blackcap. One does not see one per cent. of the wood wrens one hears. They ring their little peal of notes from among the upper leaves, till they descend to nest in a covered dome which you

will find easily enough by flushing the bird, hardly enough by mere eyesight. How different from our thrushes and blackbirds who career about the bare lawn, who hallo from a bare bough, who advertise their nest to the eyes of all beholders! Where can they hide themselves to-day? "But flame? The bush is bare."

GARDENERS AND GOLFERS

"ONE touch of nature"—we all know what that can do. This week it has brought the gardener April 8 and the golfer very close together. The

gardener, accompanied by a robin, as he digs and rakes his ground for the spring seedling, discovers creepy things innumerable, of which the worst only have popular names. He calls most of them, therefore, wire-worms or leather-jackets, and for the most part has small knowledge of their origin or development. Centipedes, millipedes, or cockchafer grubs—all come under one general condemnation. The robin, with his beady eye, knows better, and distinguishes very closely the edible from the inedible. So does the pheasant or domestic hen, which is supreme as a cleanser of pests. So, too, does the keeper of a golf-green. The gardener's grief when he finds one young lettuce after another bitten in two at the soft bleached point shares his grief with the golfer, who weeps to see his most cherished patch of fescue or bent as brown as if it had been composed of some pernicious annual Poa. A wail arose during the week from the keepers of those fast and smooth and well-shingled tapis verts that are one of the charms—among very many—of the Rye golf links. The enemy was the leather-jacket; and his ravages were so great that the greens were closed till they could be "grouted" or otherwise repaired.

Now the leather-jacket—admirable rustic name—as

all green-keepers know, is the precursor, the first presentment of the crane-fly that we all recognise under its other admirable name of daddy-long-legs. The fly is classified as the most primitive in form of all the flies. It is certainly the most ludicrous, at any rate, in the eyes of those who do not suffer from its depredations. One of the queerest of autumnal sights in this section of natural history is a maternal daddy-long-legs—if the contradiction in terms may be allowed—laboriously flying in an almost vertical position, all the while laying eggs “with all its might,” which fall like miniature hailstones on the attractive breeding-ground. The fly may drop several hundred on a single green. The method is not altogether unlike the mayfly's, except that the one prefers a grassy, the other a watery nursery; and the daddy's eggs fall singly, not in adherent clumps. But they, too, have the power of sinking, and probably, if the weather is at all favourable, hatch with quite unusual success. “Of myriads brings but one to bear” would hardly apply. Now, last autumn the crane-fly were so plentiful in places that the awkward dancing of the multitude gave a shimmer, almost as on a day of gossamer, to a whole field. The birds gorged themselves, as trout in May. It is quite likely that many thousand eggs were deposited on the favourite greens at Rye, which has the disadvantage of being far from a habitation of rooks, the birds that are the most thorough-going enemy of the leather-jackets. I have seen a ground as freely pitted with holes dibbled by their strong beaks as if it were a patch of snow under a tree after an hour of thaw.

All grubs prepare for their apotheosis by incredible gourmandising, but none has a more methodical determination than this drab-coloured, tough, ugly creature. Who could imagine that it would emerge into a fly which almost abjures food, and is so slender that its limbs fall off at a touch, like the clown's in the

pantomime? I do not know whether any one has assessed its gargantuan capacity; but country gardeners believe that a single grub will follow along the line of lettuce seedlings, taking one plant every other day or so. Even when its feeding stage was over, it would still be particularly offensive on a golf green, for the pupæ have a queer habit of thrusting their nozzles above the ground and so allowing the winged fly to project itself straight into the air. One may imagine the feelings of a golfer whose ball was deflected by one of these procreant tubes!

Grass, which is the making of most games and most English gardens, has three chief underground enemies. The Oxford Newdigate aspirant wrote of the condemned king:—

“ For seven long years he ate unwonted grass
With the wild oxen and the savage ass.”

The cockchafer grub does not continue quite so long, but its unsatiable hunger may last for half that term. How it forages is a question, for the burden of its stomach becomes so portentous that the legs are scarcely sufficient to hold it in place, much less to drag it along. This grub has nothing superficial in common with either the wire-worm—that will emerge into the click-beetle—or with the leather-jacket. These other two destroyers of grass are extraordinarily tough and not a little active. They are foragers, as clever almost as moles or worms at tunnelling the soil.

It is often said that wet seasons discourage the production of insects and other creepy-crawly creatures. Certainly a good many are drowned. There are hollows in fields now quite horrible with the multitude of drowned worms lying on the sodden surface; and the fertility of the soil will be checked till the population is restored. A very large number of pupæ-cases are knocked off their niches and destroyed, and a good

many others drowned by heavy rain. But the wet is of advantage on the whole to very many of the grubs and larvæ and other crawling animals. While the pupæ are almost proof against frost, but may perish with excess of damp, the larvæ prefer to be near the surface, and when the ground is frozen hard may have only less trouble than the birds to find soft food. Was there ever a spring when the colonies of slugs and wood lice were more overcrowded? You may discover in some favourite cave a score of "slaters" (*Porcellio Scaber*) heaped round a number of torpid slugs and scurrying over yellow eggs and dirty webs and sometimes running into myriapods and earth-worms. How our world teems with life! I found five species and over a score of individuals behind a single square inch of elm bark. The place was only less populous than a drop of dirty water, as seen under the microscope.

ON SEEING BIRDS

A WEEK after the chiff-chaff, who was a day or two before the wryneck, the migrants appeared April 11 in number and variety; those who wish to learn birds and are not yet experts have their rarest opportunity. No bird has a hiding-place; and all are, nevertheless, in some measure forced to obey the orders of the almanac—to respond to the sun, not the temperature. The migrants swarm into the Southern counties, our home birds are building nests, and their songs were seldom more exuberant. The quicks are nearly as black as the blackthorns, and all the trees are bare. Never in my experience of bird-watching have I had so much nest-building brought before my eyes. Not once or twice the presence of a bird on a bough has been forced on my

notice not by its colour or movement, but by the uncouth obviousness of the stuff in its beak. Just now a neighbour excitedly summoned me to decide the species of a strange bird perched on a wych-elm. On closer observation it proved to be a hen blackbird, carrying in her beak a great morsel of brightly-coloured moss. The elm was quite bare, though studded with buds just on the point of breaking, as was the site of the nest in the hedge.

Thrushes, missel-thrushes and blackbirds are wont to build only less conspicuously than rooks; and the toll taken by boys, rats, and other vermin—these may be grouped together in this reference—is grevious. Hedge-sparrows, chaffinches, robins, and tits have achieved equal boldness. In the case of the tits, it is not the nest that is obvious, but the building manœuvres, and the caprice of the weather has lengthened these out inordinately. A touch of west wind redoubles the energy. A blast from the frozen east arrests it altogether.

A week of intensive observation now would be likely to yield a greater harvest than months a little later; for very soon this uncanny visibility will thicken into a soft mist of flower and leafage at a speed that will in part compensate for the lateness. An exotic green is over the larches, and never were lilac and chestnut and sycamore buds quite so exuberant or the pressure of sap harder to resist. With untimely cruelty I cut down a sycamore that was destroying an old wall; and at once, to continue for many hours, the sap flowed out not in a dribble but in a flood. You could collect quarts. Every grass and plant and bush and tree bubbles with inspiration, struggling for outlet at the first moment of encouragement. The "nettle-creepers," already recorded on the south coast, will find the nettle clumps high enough to cover the brambles within a week or two, and the dog-rose just begins to offer a screen to the linnet. The robin in

the bank has collected a plain enough cushion of brown leaf, but she has only anticipated the kindly defence of the stitchwort and hedge parsley by a few days.

All this means that the most exciting week of the year is upon us, especially for a beginner in the observation of birds. If you hear a strange song you may track down the singer, as you never will be able to again when he can play hide-and-seek in the green shadows. And in the list of pleasures I know none more lasting—where a more generous excitement is followed by a more enduring satisfaction—than the discovery of a new quality in a bird. The most deeply delighted man I ever met had just discovered for the first time that a baffling song in his garden was sung by a cirl bunting! He had never before thought that the bird existed in his locality. Now the song is seldom out of his ears. We see and hear for the most part, unless the sights and sounds are very aggressive, only what we know or expect.

LITTLE PARADISES

FOR refreshing the tired mind, for recreation—or the re-creating of the mood of spring—no recipe April 15 is better than to visit or revisit a scene of known virtue. As children of country people will slip off instinctively to some favourite nook—a spinney corner, where the moss is thick on the roots, a hollowed tree, some reach of a brook where the gudgeon show silver—so older persons, more consciously, but perhaps with like motive, take train or car or “Shanks, his mare” to some pool of quiet splendour where they may wash off the dull dust of wintry or urban thoughts. The favourite date for medicining their affliction is Easter, the festival of a resurgent world.

Which pool shall it be? There are many, and not all of them in the warmer South. Politicians may enjoy one at Chequers, a house set in a spacious hollow of the deep, deep country, singularly restful because of its want of salience. One corner of this most English scene is no better than another, for its glory is the scoop of the vale, the gradation of colour, the structure of a landscape where nothing has ever been hurried, where every rod of land, porous to the affection of a quiet folk, expresses their native interpretation of the growth of the year. The cattle, the trees, the houses, the people consent to a mutual relation; and this great house at the hub of the valley is scarcely more conspicuous than the holly hedge or the red herd of grazing Lincolns. The dip between the rolling hills surpasses the more famous view from their top. I know none more English than this.

Wide prospects, too, are refreshing. You may glory in them without leaving the counties that immure London as an Elizabethan red brick wall and broad flower bed enclose a Surrey lawn. Can you not see Beachy Head from Crowboro', across green valleys and slopes more homely than a private park? There is never compulsion to travel far in England; but perhaps the richest of all the counties in spacious views of spring is Worcestershire. Almost, perhaps quite, the most extensive and richest are to be found along the Shropshire border and the valley of the Teme; but in spring, at the moment—it lasts a very short while—of the blossoming of the plum, no other quite equals the lake of bridal white seen below Bredon Hill. I met not long since a man wholly immersed in commerce who said that if he did not look down over the vale of Evesham in blossom-time he felt as if his heart had missed a beat.

A wide view is refreshing like a wind off the sea or the heath; yet our most vivid memories are of more intimate nooks, where you may touch and hear as

well as see and feel, where you may be sure of rediscovering this flower and that, or this bird and this butterfly. Two such in Berkshire, that rich and various county, come to mind. One is on a hill whence you may, if you will, enjoy pleasing glimpses of the Thames and its common thorpes; but your attention is wholly concentrated on the patch of Pasque flowers that grow, rather surprisingly, almost cheek by jowl with unusually lusty junipers. I would put this lovely lily, so-called, first among our native flowers. Its rarity—in common experience—doubtless helps to exaggerate its charm, but, growing where it does grow, splendidly but humbly, its quality forbids the word "wild." It claims the glory of the garden flower in a wild and secret place. It is not so early as the only other native British anemone, which surprises us in the woods almost before we expect the arrival of spring. In spite of the size of the flower it is not very conspicuous; but we remember very exactly where we have found it. So different are the two in site and suggestion that we scarcely think of associating the lovely sisters, *pulsatilla* and *nemorosa*, as of one species.

Birds are only less faithful to locality than flowers. On one May bush overhanging the Lea, the kingfisher—"the skyblue bird of March"—stands day in, day out. Along one bit of hedgerow half-a-mile farther down a family of long-tailed tits plays every spring. At one bend in the stream you may make quite sure of seeing the watervole busy among the sedge. A chaffinch builds every year in one of three or four trees in the orchard, but he prefers the Blenheim. You may be absolutely certain of finding the chiff-chaff and willow warbler at certain spots in Selborne, now as in 1792; and the trout will lie April after April where the spring water bubbles from the chalky-sand at one of the sources of the Pang. Which shall it be? Landscape or flower or bird? The

garden, the orchard, the hill, the valley or the stream? There is sure and certain re-creation in any one.

BARE NESTS

AT last! The earth has been bare, the boughs bare, the hedges bare, for so many long months April 26 that waiting became a burden rather than an excitement for all of us—for men, for farm stock, for birds, for the whole race of winterers, and, perhaps—who knows?—for plants too.

“ I must believe, do all I can,
That there was pleasure there.

And if pleasure, then by inference pain. This week, but not last week, the “bread and butter” buds are out on the quick hedges, the larch plantations have put on their alien green, the blackthorn decks bridally its black shoots, the hedge-parsley flowers at the hedge-row foot, the chestnuts burst their sticky but woolly buds, the elms are purple and the ashes sepia with flower, the yews dusty with seed, the wild Lent lilies a gay carpet, the meadows green, not gray, the whins lit with golden patches, the peaches pink against the brick wall, the fritillaries opening their snakes’ jaws, the pear trees almost bridal in the orchard. The toads stride down with dignified speed to the river, the butterflies—tortoiseshell, peacock, and whites—are almost as thick as hive and bumble bees on clumps of arabis and aubretia, and the cuckoo “begets the golden time again.”

At last the yearly miracle is wrought; but the long delay has left some curious traces. Many of the birds could not wait for spring. The tide of their energy rose to the time, not the clime, and they must needs

begin nesting whether there was cover or whether there was not. The order of nesting was changed among the species. The tits are not usually very early in the field, though they often begin prospecting early, and may be seen in and out of likely holes at the first hint of spring. But this year in some of our gardens the tits, since they at least could find hiding, were the very first to build. A number of the nests are now a fortnight old and more, and the first moss was laid in the bottom of the bird box more than three weeks ago. The robins, earliest of all the birds on occasion, were still searching for cover or shivering in the cold. Was the following tragedy due to frost? While inspecting and clearing one of his bird-boxes, a little too late in the year, an amateur gardener found in one box a pipistrelle bat that had, it appeared, been feeding on a dead tit. I have before found bats harbouring in bird-boxes, but never before heard that they had entered with any criminal intent. Let us hope it is rare. A new nest is now being built at the scene of the tragedy.

The distress of both blackbirds and thrushes at the absence of plausible nesting sites was quite obvious in their daily behaviour. I watched one pair of blackbirds for a long space searching for a niche. They tried for a while several places in a heap of faggots and loose wood, but gave it up owing to the juxtaposition of sparrows who insisted on roosting in the twigs just over their heads. At last the pair took their courage in their beaks, and at great speed built a nest inside a shed within two yards of the favourite wood-chopping pitch of the gardener. The nest-building was rapid and exceptionally rough. One dead stalk of a garden plant is two feet in length, and forms a semicircle far outside the conference of the nest proper, into which it is fixed at either end. A good many bents are so loosely attached that some have fallen to the floor. The full clutch of five eggs was laid within four days. A thrush, rather earlier

than the blackbird, built in some very thin ivy against a stump, within three or four yards of a more or less continuous garden bonfire, and in very close neighbourhood with some sparrows. These incorrigibles have been building almost in flats, one nest so close to the other that the dried grasses from the foundations of the upper fell on the top of the one below ; and the normal untidiness seemed to be aggravated. More than once I watched one of the builders quite fail to rise to the height of the nest, so big and clumsy was the material it attempted to lift.

The ivy tod's were the only resort for birds not as a rule well disposed to such places. Chaffinches seem to nest earlier and earlier, compared with other birds, as their numbers increase. They began this year before the blackbirds, at least in my garden, though they postponed laying. One of the nests is rather precariously hung, on thin ivy shoots clinging to a tree overhanging the river, a most uncharacteristic spot for the bird, which prefers a good solid fork or bough, where it trusts to the neatness of the outline and the skilful colouring to escape detection. However, this hidden nest was even more than commonly neat and deftly tinted. Not far from it is a hedge-sparrow's nest, with full clutch, in a very similar position. The cock bird sings contentedly half the day within a few yards. Happily, at last all troubles are over. The great change has come. The quick hedges are curtained, as Tennyson, most quotable of poets, says :

“ Now burgeons every maze of quick.”

How carefully he picked that word “ maze,” but even he could find no alternative to the rather pompous “ burgeons.”



A LITTLE known, but very rich poet—the late Lord de Tabley—wrote of May :

“ Flower upon flower expands ;
May reigns in hawthorn lands.
Gone all the saffron daughters of the snow.
Sweet summer tells her son
The daffodils are done :
Spring takes his mother by the hand to go.”

It seems to have been favoured by aristocratic poets.
Lord Thurlow is as good as Lord de Tabley :

“ May, Queen of blossoms
And fulfilling flowers,
With what pretty music
Shall we charm the hours ?

Thou hast no need of us,
Or pipe or wire ;
Thou hast the golden bee
Ripen’d with fire ;

And many thousand more
Songsters, that thee adore,
Filling earth’s grassy floor
With new desire.”

and indeed, the month gives us the best of summer, as well as the best of spring. “Merry” was its constant epithet in England nearly a thousand years ago, and

England in the country places still keeps many May festivals that were in vogue before the days of Elizabeth ; indeed, probably from the Roman conquest. Though Maypole dances, now reviving, have for long periods gone out of fashion, the small school children have never (at least in my native village) for any first of May omitted to deck May Queen grottoes with primroses and cowslips and carried them round to announce the month that we call "merry," and the Saxons "wonderful."

It is the month of months for the naturalist. Every species of bird is singing. The nightingale, the black-cap, and all the summer visitors are at their best ; and if you go to watch them when the month is young the leafage on bush and tree may be just delicate enough to allow your eyes to penetrate their retreat. All birds nest as well as sing in May ; and with what judicious skill chiff-chaff or chaffinch or linnet, and the rest, will hang the nest just behind the new buds of thorn and briar on the principle that the nearer the front of the bush the harder to see. The last of the migrants have come and the most sluggish of the hibernators have left their winter quarters ; the bigger bats, the dormice, the queen wasps and bees.

England is at its most beautiful in most years when May has passed the second week ; a date when the last of the frosts is apt to fall, sometimes with rather a heavy hand. After that the apple orchards give whole counties a bridal look.

Yet there are Mays *and* Mays ; and in most years some virtues are claimed for May which belong to the coming month. The May-fly—to which all inexpert fishermen look eagerly forward—is often belated ; and so too is the May or hawthorn blossom, with its heavy scent, which is even more characteristic of rural England than the orchards of Kent or Worcestershire or Cambridge.

Quaint traditional rhymes are many, such as :

"A swarm of bees in May
Is worth a load of hay."

Or, on the same rhyme :

"A wet May,
A big load of hay."

But May is reasonably dry as a rule, with an average rainfall of just under two inches ; and the sun is up for sixteen hours of the twenty-four.

MUSIC AND SONG

It seems to me, listening to a willow warbler (who is building in a little blackberry clump) that May 4 the visitors, musical though they are, are inferior to some of our natives in one particular regard. For the next six weeks the songs of our home birds will almost be forgotten in the ripple of the warblers who come from over the seas ; in the fresh bubble of the blackcap, the plaintive cadence of the willow-warbler, the "thick chattered cheeps" of the sedge-warbler, the passionate range of the nightingale. It would be rash to argue about inarguable taste, to grow dogmatic over the old question of the best singer. Different ears will prefer the nightingale, blackbird, blackcap, and lark, which correspond to Shakespeare, Milton, Chaucer, and Wordsworth. They come at the top of all lists, in whatever order they are put. All four differ immensely ; but to my ear at least many of our home-birds come rather nearer to the musical scale that is most familiar to human ears than do any of the summer warblers. Possibly the only true interval in any bird's song known in Britain is the cuckoo's ; but the cuckoo's double cry,

imitated with absolute accuracy by half the small boys in country villages, is not worthy the name of song, however blithe the wandering voice. Of the rest it has always seemed to me that the blackbird comes very much nearer to tune, as all understand it, than any other bird that spends its summer in Britain ; and the sound, perhaps because our hearing is better attuned to it, travels farther. This spring one particular blackbird, with a liquid whistle as full almost as a golden oriole's—and he is much the most liquid of singers—has for nearly two months been pouring out a song of inexpressible clearness some 300 yards from his most appreciative audience ; and the distance has not in the least subtracted from the charm.

With most songs, the nearer the bird the lovelier the song. Such singers as the bullfinch and nightingale have the softest sub-notes, that may quite change the character of the song. Some of the hen-birds, supposed to be almost mute, have low delicate whispers just perceptible at a short distance. The hen bullfinch is one. The blackbird does not finesse. He sings out a good loud certain tune. It is not always, is not often, quite the same tune ; but it tempts the human musician to put it into music, and listeners commonly believe themselves to hear bits of real tunes. None of the reproductions is quite true. Not even Witchell succeeded, though he had a supreme ear for song and good knowledge of musical notation ; but on a fiddle you get at least some impression. A famous bird in the Oxford meadows opened his picce with a recollection of the "Yeoman of the Guard," thus :—



The last of the five notes was slurred, but the first three were quite true.

It is always possible in such cases that conscious imitations play their part. We all know how admirable a mimic of other birds is the starling, especially of the thrush. Some find bits of all sorts of borrowed staves in the lark's song, though here it is more probable that the similarity is due to a similar syrinx rather than any conscious or unconscious mimicry. It does not follow that a bird can imitate a man because he can imitate a bird. On the other hand all aviculturists are familiar with the docility of many caged birds, especially the bullfinch, as musical pupils. They learn to whistle as well as to sing; and the blackbird perhaps rather whistles than sings by nature. Witchell took down a great many blackbirds' songs—and very remarkably they differ. The most characteristic goes like this:—



It is surprising that few attempts have been made to capture the song of the missel-thrush, who is nearer than any other bird to the blackbird.

A surprisingly large number of listeners in England (and in Germany) endeavour to imprison songs within bars—musical bars—but it certainly cannot be done if the piano is the instrument used for interpretation. That complete little set piece of the blue tit quite defies reproduction. We all hear in the chaffinch's regular and precisely repeated succession of notes a pleasing lift at the end. It may be compared with a characteristic ash bough, rising at first, then weeping, then just recovering at the end. But it is not by a

half-tone nor any describable fraction of a tone that the penultimate syllable rises.

It is all, perhaps, a vain question. What we enjoy is something other than the music. A single note may "beget that golden time again" quite as successfully as the two of the cuckoo or the ten of the blackbird. Sight and sound join to make a harmony. Did not some blinded naturalist delight in the spring songs, because more than anything else they brought before his mind's eye the green delight of swaying bouglis and the green fortress of stiff hedges? He loved the sound for the sake of the sight, for the sake of the general harmony of the senses.

NESTING TROUBLES

A HOUSE-MAKING trouble, almost new in my experience, has exercised the wit of birds, and indeed of May 11 insects, this wonderful month of May. We have all admired the fullness of growth. A few day's absence from a home has made it almost a strange place to the returned traveller. The hedge-rows are more than waist-deep in kexes, hedge-mustard, goosegrass and stitchwort. The side of the house that was a dark, dirty green has turned to the freshest, lightest green of the young ivy. A transformation of much the same rival tints is over the blackberry brake. At last the old leaves that have stood the long winter, as if they were posing as evergreen, have been thrust off by the activity of the young leaves widening the axil. Most sudden change of all, the sycamores—lovely trees loathed of gardeners—have expanded their fans of leaves till the shade beneath them is as impenetrable as on a midsummer day. The bare brown field is lush enough to suggest the hay cutters. A relic heap of wood has clean disappeared under the

nettles. The pear-trees shake petals over the tits, whose April activity among the buds seems not to have done a pennyworth of harm. If three per cent. of the flowers become ripe fruit, the crop will be immense. The ground in the rough border has vanished under the spreading clumps of delphinium and peony and larkspur and galega.

This gorgeous growth has given cover to the birds, but it has been too beneficent. I have found nests half-destroyed by the activity of the shoots on which they are built. A delightfully neat chaffinch's nest is thrust aslant by an ivy shoot and is deserted after two eggs were laid. A hedge-sparrow has just overcome a severe risk. She built in a clump of bergamot in a herbaceous border by the side of a path frequented by children and dogs, among other natural disturbers of the peace. What would happen to a dunnock if she had dared to try a nest in one of the delphinium clumps is "a thing imagination boggles at."

A certain number of ground birds have deserted. The chief reason perhaps is the excess of rain, though most birds, especially plover, are instinctively careful to avoid any site where water may collect. How very very often the peewit builds—if the word may be used of its scoop—as near as may be to the highest point of the ridge! But the abnormally hurried growth of the spring crops has quite certainly confused them.

The exceptional number of migrant birds has further complicated the problem. Were ever willow-warblers more numerous in Eastern England? And, incidentally, did ever swifts come so early in such large numbers? Some of the warblers have been here for six weeks; but one would say that they were perforce putting off building till the brambles—beloved of warblers—and the nettles that attract the white-throats had a little reduced their activity.

Competition for nesting-boxes—good, steady, unchanging sites, exempt from the trouble of eccentric

seasons—has been acute. In different cases bees, mice and bats have all troubled the birds; and sparrows, against their proper nature, have struggled for days to enlarge the holes to a size proper to their portly persons. Absentees from the fight are the wrynecks. They have visited one particular box and laid eggs there for several years, though no brood has ever been hatched; and their laughter from the trees is a regular spring event. But this year they alone seem to be absent. Is it a common experience that they are sparse? Their "mate," the cuckoo, certainly is not.

Local experiences of the comparative rarity of birds differ curiously. Sir Herbert Maxwell, one of the most watchful of naturalists, has complained of the rarity of the plover, and attributed it to egg-collectors and to indiscriminate slaughter. Plover are nesting freely in Hertfordshire, and are quite undisturbed now. A little earlier a pitiable number of scoops were flattened out by the rollers; and it seems to me that such farming operations are much more disastrous to the birds than all the gourmets and oologists. Happily, unless it is very dry the rollers cease in time to allow of a second nest; and experience has proved in the case of the rock-nesting birds on Bempton cliffs that if the marauders stop at a certain date their early inroad does little or no harm. It may even do good. Plovers' eggs should be absolutely prohibited as a food after a certain date. The rollers would then punish only the gourmets, who demand their eggs at the earliest possible moment.

A MAY FROST

WE are apt to call spring treacherous ; and of all its treacheries none is so deadly as the belated May 12 frost that often falls towards the end of the second week of May. The weather prophets have made out a considerable list of short periods remarkable for particular freaks of weather, dry spells and wet spells and windy spells and warm spells. Perhaps none is so regular as what is called in Germany "the Festival of the Three Icemen." The German botanist Kerner says of them :—

"Pancratius, Servatius and Bonifacius, whose names stand in the calendar against the 12th, 13th, and 14th of May, have popularly been called 'Eismänner' in Southern Germany and Austria. They have received this name on account of the fall of temperature which takes place about the middle of May, the cause of which is not yet fully explained. Later in the summer such falls in temperature, connected with cooling of the atmosphere on a large scale, occur on certain days with some regularity ; but these have not received so much notice because they are not so dangerous to field products, fruit and wine, as the relapses about the middle of the month of May. Moreover, though really cold days occur in June and July, they are never followed by a frost, while the three 'Eismänner' of May usually bring with them severe frosts at night, even in the mildest regions of Central Europe, thus doing incalculable mischief to vegetation."

I have seen almost every little peach or apricot in a garden killed stone dead in this week ; and these young set fruits are, in my experience, at least as sensitive to frost as the flowers. It is certainly a mistake to suppose that the trouble is over when the fruit is set, as many suppose, though it is true in some

measure of the plums. I spent one frosty May morning in Evesham at the hub of the plum harvest. The whole landscape a week or two earlier had been white as with snow under the flakes of blossom. It was now as green as a meadow. The flowers, being in some measure wind-fertilised, come out before the leaves to allow free passage to the pollen, and by their openness are very susceptible to frost. But as soon as the fruit is set the leaves rush out and their covering is protection, though not proof against milder frosts. In general the May frost is to fruit blossom what the June thunderstorm is to young partridges. Nothing in the gardener's annals is more painful than a visit to his strawberry bed after the Icemen's festival. The golden centre of each blossom is blackened as if oxidised by the chemistry of frost, and perhaps not one in a hundred of the fully opened flowers will bear fruit, though happily the younger blooms will be strong enough to resist. The danger period is so short and precise that some of the Worcestershire fruit-farmers were trying ingenious devices to resist the frost, when its approach was announced. One had a thermometer attached to an alarm that it set in motion as soon as the mercury fell to thirty. At the sound he hurried out into his orchard and lit a number of "smudge fires" that enveloped the trees in a protective cloud. Another farmer—a market gardener of real genius—I met one morning after a late frost on the way to his potato patch with a water cart and a can with a rose on the spout. The black tops of the early potatoes are as melancholy a spectacle as the black centres of the strawberries; and he was not going to submit to the melancholy if he could help it. In his researches into the tactics of frost resistance he had made a discovery. It was not the frost that killed, but the after thaw. The cells burst from want of moisture in the period when the air warmed, but they were still stiff and unresponsive. So he watered

his frozen tops, leaving a few roots untreated for experiment's sake. A day or two later he sent me a bulletin. All the watered tops were green and unhurt. All the neglected plants were blackened!

These May frosts have often been described as the peculiar curse of our English spring. But the threat is general to the world. Europe suffers as England suffers. Even Australian fruit on the higher inland places may be touched. Sudden belated frosts, as a friend in the north of the Argentine writes, will now and again cut the sugar canes to ribands on the very edge of the tropics.

Our consolation is that when the three Icemen have celebrated we may confidently expect the end of frost, at least of a killing frost, though once in this century some touch of frost was recorded in eleven out of the twelve months.

THE GREAT TRANSFORMATION

To the countryman, however intent on some particular bird, or insect, or flower, a moment, an hour, May 18 a day comes when he can do one thing only—he must sing a song of general thanksgiving; he must praise England. *Benedicite omnia opera.* Grace must be said. *Benedictus benedicet;* and at night *Benedictus benedicatur.*

To-day is one of those days. Every sense is both stirred and lulled. But though things are happening in garden, spinney, meadow, and lane, the mood is subdued to a quietude that is almost quietism—rest with mysticism added.

The land is so green that it is almost as uniform as a calm sea reflecting a clear sky. It seems to be rather water than land. Here where the stream divides two grass fields, almost ready for the scythe; the brown

waters are turned to green, to a colour almost the match of the back of the frog that has just dived in with a peaceful plop. A newt, with a gold-rimmed eye, just a little brighter than a toad's, lies almost still on the mud in a pool by the riverside ; and the shining mud itself has a green texture borrowed from the sycamore overhead. How distinctly the inverted arrowhead of a moorhen's trail is imprinted on either side the slumbering newt ! The flowers hanging from the midst of a thousand leaf-fans are almost as green as the leaves ; and the trees, most exuberantly rich in flowers and not yet heavily leafed, have a light grace half foreign to the genus. A few days' hot sun has quite routed the protective bronze and purple tints that at first infused the timid leaves. To one standing beneath the sycamores seem all flower, just as from underneath the chestnuts look all leaf, though from outside all bloom. The flowers, too, are subdued to that they work in, the master-tint of nature that alone manufactures life out of stone and sunlight. The green shoots of plum and pear have quite swallowed the white blossom, some of it spilt like foam over the grass, some merely retreating into the depths of the tree. Primroses, whose soft yellow is almost a quality of green, are still enjoying their long season, but now you have almost to search for them in their broad and upright bouquet of leaves.

This enveloping greenness over meadow and orchard, over quick, blackthorn and forest tree is, nevertheless, of the spring, not of the summer. Reminders are plentiful enough, over and above its freshness, that the world is young. The flowers of the ash are brown, the leaves of the oak are bronze, the tiny leaves of the elm cannot conceal the twigs, and the green of the wych-elm is flower, not leaf. The foreign acacias are still in their winter dress ; and though some of the leaves are the sequel to flower, much of the greenery is—what shall one say ?—subliminal, the subconscious

prelude to the expression of colour, is a "green thought" in more than the Marvell sense. The rainbow colours that emerge from the green, as words follow thought, are just about to be seen. The whole contour of the common will be a very flame of gold to-morrow. As a spectacle of the suddenness of the colour-birth, it is worth while to watch any patch of dandelion—were dandelion flowers ever so big and many as this year?—when the sun first strikes it full. An area of green scarcely distinguishable from the rest will break into suns gleaming almost too brightly for the eyes, within a few minutes, as if they had come out of a cloud. They will set even more abruptly in the evening, as the green sepals lock up the gold for the night.

The lilacs—singularly earlier in London than outside it—are on the point of being born into purple. How rapidly the red dye has soaked into the green of the outer petals of the Darwin tulips "divinely tall and most divinely fair"! Here and there—like a person who cannot express himself—the process of suffusion has suffered perversion. In one particular Darwin, less well-grown than the rest, all the purple has been condensed into the tip, and the rest remains as green and undeveloped as ever it was—an odd specimen sent to illustrate how easily the perfect gradation may be upset. One of the few flowers that itself actually changes from green to brilliance, inside as well as out, is the clematis. On the Montana they are still suffused with leaf-colour, not petal-colour. In the white bryony, now growing more than an inch a day, the green never disappears.

The completest transformation promised, and in places fulfilled, is on the floor of the woods. If you want all that is most glorious go visit first, say, a Hertfordshire wood, where the blue of the bluebells wavers like an atmosphere over the dark leaves, and then a Buckinghamshire beech wood, where the leaves uncrumple from the just now brown and arid

buds. They trail clouds of glory in the shape of a silver down, soft as a young moorhen's, and a little suggestive of the delicate scale-edges and fins of the fish that wave their slender bodies in the shallows of a tropic sea. It is inevitable on these May days in England that fantastic similitudes should float into the memory, but it calls up nothing quite so satisfying as England itself.

YOUNG BIRDS

THESE last few days the garden has become populous with young birds, of short tail and dazed expression. The parents suffer agonies of apprehension on their behalf. The chattered anger of the robin announces the neighbourhood of the cat wherever and whenever he prowls; and the tits cry out a warning so high-pitched that it almost rivals the bat's hunting note. The calls of the old birds are various enough to baffle any ear—unless it is a Hudson's—but many are curiously easy to imitate; and the young are very easily deceived. Indeed, in America the learning of the parental calls is becoming a regular part of the naturalist's equipment. Quite often the young are lost by the parents for long periods, but are searched out with self-sacrificing thoroughness. Parents seem also to develop memory. The bird cannot in a strict sense count; but the mother who continues feeding her young long after they are flown certainly appears to miss any prodigal that fails to answer to the call. You may watch both robin and blackbird searching and quartering the ground.

Yet this fond affection comes at last to a very abrupt end with all the species, save two or three, wild or tame. In the case of a domestic hen, I saw the very moment arrive, "pat like the catastrophe." The

mother had been a model up to the last hour. You could not pass the enclosure without hearing that loud, eager, imperative call which indicates discovered food (or occasionally is used fraudulently to collect the children). She always saw that the chicks had the first fruits of any treasure trove. All went well and normally till one morning a handful of corn was thrown in by a casual hand. The mother, as usual, gave the summons, but almost simultaneously from a hundred yards off some of the unmatrial cocks and hens began to call and cackle. The erst model mother caught the cry, walked hurriedly once or twice like a caged beast alongside the wire, then began to eat voraciously, and violently pecked at any chicken that ventured to come near. One courageous and offended chick faced round in fighting attitude, and won the day. But the parental bond was broken. The mother was no longer maternal, and as soon as she was separated from her brood ran eagerly to join the company of elders. The chicks were just seven weeks old. Though it does not do to compare the domestic with the wild, I should say that the blackbird quite ceases to feed the young at about the same age. Is the cessation a sudden event, an abrupt psychological and doubtless physiological change, as in the case of the cross-bred Wyandotte?

The most obvious, the most numerous young are the rooks. Indeed they are becoming a problem. A census has been taken this year round my house. There are now 210 nests, an increase of at least 20 per cent., and round a neighbouring house the increase is yet greater. The rookery is almost without enemies, as squirrels are rare in the neighbourhood, and hawks, of course, too timid. Within a very narrow area the young rooks can scarcely number fewer than 1000. It has been proved (the best authority is a Hungarian farmer) that the species changes its habits very rapidly as soon as the number grows at all excessive. The

birds rob eggs and even kill young as if they were carrion crows. Their depredations in the vicinity of the Hertfordshire rookeries are certainly serious. Some sections of a wheat field have been eaten clean out; and it is believed, though the evidence is not conclusive, that the rooks have routed the plover from favourite nesting fields. My own experience is that rooks are multiplying in a great many counties. You see quite a number of single nests—and they belong to rooks, not to crows—which, doubtless, will become the nucleus of a new “black republic.” The reason, beyond question, is the growing friendliness of the rooks’ one persecutor, the farmer.

MAY-FLY AND LADYBIRDS

WAS ever a week so full? The battery of rain, and here and there hail, destroyed much flower, May 30 and littered the ground with petals. The sun that followed pushed every green thing into such ecstasy of growth that a man hardly recognises his own paddock or orchard or garden. The scenery has been shifted, as on the stage, behind the drop curtain of a thunder cloud. In the riot of the summer play are some surprising appearances. Two insects, both called by singularly perverse names, both popular insects one may say, with a large circulation, have swarmed as they rarely swarm. One is the May-fly (which is not technically a fly), one is the ladybird (which is a beetle). For the third year in succession the rise of May-fly on the Lea—and doubtless on other streams in the southern half of England—has been portentous. At any point almost along the stream you could make sure of seeing the flies rise to the surface, open their airy wings and fly away. Dead bodies in quantity floated down the stream. What

waste ! a fisherman would say ; and indeed, though with a different meaning, any natural philosopher.

Some of these poor perished ephemerids were what we ought to call "nymphs," for the May-fly is peculiar in this, that the creature which, from the mud of its larvæ or pupæ, turns and frees its wings from the case, is not yet a perfect insect, but has yet another change to undergo before the nymph or subimago becomes perfect. A fisherman who, towards the end of the rise, finds the fish sated, may do worse than spend a few moments in distinguishing the nymph from the complete imago among the victims that are carried down stream. It is difficult to know why the May-fly have become so numerous of late years, for the preparatory years are many. The ephemerid that flies forth to parentage neither eats nor drinks, and at best lives but a week or two. But the grub has a three years' span at the base of the stream. Is the cause the unhappy negative cause of an absence of trout ?

The ladybirds—very many of them seven spots—are peculiarly early and numerous. The pessimists will certainly say that their multitude prognosticates a plague of the blight of green fly that is the favourite food of their larvæ. It may be so. Where the food is, there are the eagles gathered. But whether our world is modelled on a plan so teleological that the enemy of the plague is aware of the plague's later coming is perhaps more than we dare assert. At any rate, the garden is full of ladybirds—on plum, pear, apple, gooseberry, and rose. They are only less numerous than the cabbage butterflies who have found, and are disputing with the honey-bees, a patch of eabbage broecoli left to flower and grown into a real decoration of the garden. It is not often you can say so much for anything of the cabbage tribe. Its æsthetic qualities are not generally recognised.

And there is a third creature dreadfully flourishing after the rains, and by a combination of circumstances

endowed with unusual powers for harm in relation to the gardener. The flowering shoots of many herbaceous plants, especially lupins, have grown at altogether abnormal speed. They are so long and tender and hollow that they can scarcely support the bloom, though this is a little sparse. This tenderness was the snails' opportunity. They advanced from their retreats in the congenial wet, and with all possible despatch fell to work on the agreeable shoots. They worked like beavers on a tree trunk, and flower-spike after flower-spike fell before them with a crash. (Incidentally—it is one of those odd similitudes that leap to the eye—has it occurred to other gardeners how ludicrously the top of the tulip seeds mimics the crawling muscles of the slug?)

The snails have been as various as numerous. Some of the natural history societies have chosen the week for a special expedition in search of those that are edible by man as well as thrushes; and they have finished the day rejoicing. Quite a considerable number of the large tough-shelled Roman snail—too tough for most thrushes—have been found in the chalk country. What a seductive name it was given—*Helix Pomatia*. But in spite of the attraction, how many people are left in England who regard it as a luxury or even dare to eat it, or are aware of the delightfully detailed recipes of some of the gourmets of a century ago? And *Pomatia* is only one of several edible species.



“ JUNE, O June that we desired so,
Wilt thou not make us happy on this day ?
Across the river thy soft breezes blow,
Sweet with the scent of bean fields far away.
Above our heads rustle the aspens gray.”

William Morris thought of the scent of the beans as characteristic of June. Robert Bridges, the Laureate of Berkshire above other counties, thought of the garden rather than the farm; and picked out some rather unexpected signs of the year.

“ The pinks along my garden wall
Have all shot forth their summer stalks,
Thronging their buds 'mong tulips hot
And blue forget-me-not.”

The month has two constant epithets, “ leafy ” and “ flaming,” both expressive enough. It is the summit of the year. After the 24th (which is Midsummer Day, though contradictorily June is the last month of spring) the year begins, as Bridges says, to “ dislustr ” a little, at least to the eye. The petals fall from orchard and chestnut. All the soft bronzes and gradations of green foliage merge into a more uniform tint and other beauties are swallowed up in leafage. The cuckoo “ changes his tune ”; and a good many other birds change theirs yet more distinctly. They surrender song for mere talk. Who would recognise the rough monosyllable of the nesting nightingale as the relic of its passionate song ?

But live things do not all celebrate the same season. June, even as late as Midsummer Day, is the beginning of the year's activity for incredible numbers of creatures, beetles, bees, and flies, incalculable in number and variety. The warm dim nights of June are populous with moths drawn by the scent of the night flowers from their hiding-places where they stood with their protective wings folded round them through the daylight. It is the month of beetles, of dragon flies, of emerging queen wasps as well as of leaves. If it is principally leafy over the landscape, it is more truly "flaming" in the garden, chiefly with the first flowering of the roses; and a hundred exotic flowers and bushes are in their hey-day.

When Morris wrote of the sweet scents of June it is a wonder that he omitted the hay. Not once but many times, I have found in French books the English phrase "like new-mown hay," and the countryside is even more widely permeated by the perfume of mown grass than of growing bean crops. The haysel does not change the look of the landscape to the same degree as the harvest; but the change is crucial, nevertheless, a sign that the summit of the year is crossed.

The month is not so rich as some in prophetic doggerel, but St Barnabas, whose festival is on the summer solstice under the old calendar, is a favourite.

"When St. Barnabas bright
Smiles day and night
Poor ragged robin blooms free in the hay."

It means presumably that when this lychnis that we called ragged robin is in flower the hay is nearly ready to cut.

Like May, June has one common menace, the sudden heavy thunderstorm that flattens the hay and soaks out the nests of the partridge and lark and other

ground-nesting birds. Their salvation lies in a sun that is above the horizon for sixteen happy hours.

THE SPEED OF GROWTH

SOME sort of general rule prevails that while sunshine creates flower, rain makes growth. Doubtless there are a thousand exceptions, though many annuals and herbaceous plants bloom best when half-parched and develop excessive greenness when soaked. However that may be, the continual torrents of rain that have introduced this June, as they ended May, have given us some salient examples of luscious and ample burgeoning, as opposed to blooming. Most of us underestimate the rate of growth, and are apt to take it on trust that some shrubs and trees are slow and others rapid growers. It is at least amusing to subject our impressions to exact measurement.

By far the most rapid bush in the garden with one exception is the Buddleia (*Veitchiana variabilis*). It started late, having suffered from the last of the frosts. Till April last year's leaves were still fresh and green, when their sudden withering seemed to depress the vitality of the whole bush. But when the shoots found their opportunity they took it with a vengeance. One new shoot is well over four feet in length and a quantity are between two and three feet. Nor do they show the least sign of arrest nor, as yet, of the great purple flower heads that will attract the Admiral butterflies by day and a host of moths by night when autumn comes. The shoots of *Weigelia*, which incidentally flowered so profusely that the outer branches were bent to the earth, are two feet four inches long on the average. The fresh growth of a white lilac, also a very free flowerer, are nine inches long. Contrast these with the slow-growers, so-called. Some shoots on the American oak are just over a foot long.

Yew bushes, entirely unfed and in rather barren ground, are nevertheless growing steadily, and the top shoots, which are considerably shorter than the side shoots, are as near as may be three inches long. Some of the Austrian pine-shoots are a good ten inches ; and none of these evergreens is near its resting point.

Of course, the climbers whose scheme of life largely depends on speed—they must hurry in order to find support before they fall—touch higher figures, whether they spring from the ground or, like the clematis,

“ Make stepping stones of their dead selves to higher things,”

or, like the honeysuckle, advance from the old base. The hop will grow an inch in a day and a night ; and the “ feelers ” of the white bryony, though the whole plant is slower, push out only less rapidly than a toad’s tongue. The black bryony, I think, is the fastest of all, the hop excepted. In some Norfolk hedgerows, where the rain has wonderfully favoured the sandy and gravelly soils, it is now six and seven feet high ; and has spiralled up quite clear of the hedge. The tip sways this way and that, seeking support, as consciously, you would say, as any sentient being. The Buddleia is running a race, and just losing it, against the honeysuckle, whose longest shoot is four feet eight inches, and still “ going strong.” The least credible example of growth in my garden, is a sheaf of ash boughs and saplings. They bear the appearance of such a climber as the bryony. One slender shoot making for the light is almost as soft as the stems of the delphinium. Some of these are five feet high and the whole group have grown quickly enough to form a new screen of greenery, quite obscuring what was open a few weeks since. I have before seen an ash shoot that grew fourteen feet in the year, and was only less breakable than a kex stem.

In the study of the rate of growth lies a moral for the gardener. Plant small stuff. Again and again and again, against all expectation, the transplanted things that began to go ahead at once have caught up and passed their elders ; and at the same time made better shrubs or trees. In any case screens may be made and landscape effects secured much sooner than is generally felt and believed. The heroic experiments at Wembley, where a greater miracle than the woods of Dunsinane was wrought by removing mountains of trees, would seem to give the lie to this claim ; and doubtless free expenditure and the best apparatus can compound new scenery within six months. But where the scale is more humble "the smaller the better" is not a bad rule ; and of all garden pleasures none perhaps is more satisfying than the fun, the sheer fun, of watching rapid change, of seeing the garden children grow up and at the same time increase in favour. Some one ought to make a special measure for the gardener's use and a notebook designed for the records.

JUNE THUNDERSTORMS

MORE rain ; and how sorry we ought to be for the groundlings—larks, pipits, plover, pheasants, June 8 but above all partridges and landrail. Every sportsman regards the June thunderstorm with much the same sort of hatred as the fruit grower the May frosts. They stand for the cardinal sins of our climate. The storms descend on the chicks lately hatched and kill them of rheumatics, by wasting fevers, by sheer damp cold. That is the common fear. This year the date is anticipated, and the storms of rain are at least double the normal : three and three-quarter inches in the thirteen hours, after days and weeks of earlier soakings ! In the wake follows a

different and less deadly calamity. The egg, not the hatched chick, has been drowned. Here and there were very forward nests; but on the whole the start was late as the thunder was early. Keepers have found nest upon nest serving little purpose beyond offering a convenient pool for the rain to lie in. Sometimes the old birds—as near Huntingdon, where a clay soil and the French partridge abound—the old birds themselves have not been able to rise, so clogged were their feet with mud, and, perhaps, so drenched their feathers. The plover is apt to build on a ridge, the pipit loves the dry common, the pheasant prefers wood or hedgerow, and with them the catastrophe is less. But some nests of the bush-building birds have been filled with water; and here and there even the birds that build in holes—nuthatch, tit, starling, wryneck and woodpecker—have been forced to desert. I can vouch for the forced desertion of a thrush and a nuthatch under condition of flood. What chance, then, had the field-nesting partridges?

Yet the disaster is not irretrievable. The dreaded June thunderstorm often leaves the partridge childless at a season when it is too late to repair the loss with good chance of bringing up a healthy brood. But this year there is time enough—if sportsmen will be very careful of preserving “squeakers” when September comes. As most plants—at least annual plants—hasten to remake flower and seed if the first are destroyed, so birds. They will lay again and again. Occasionally the partridge will start sitting in September itself. This year, if the sun appears, they will be laying new clutches at once, when they discover—as they discover very quickly—that the old eggs are killed; and it may be that the final total will not be in the least diminished. It may even be increased. The year is yet young—even younger than the date suggests, and, as if prophetic, wiser pairs have not so much as begun to lay.

The rains came early enough to avoid harming the migrant warblers, of which a number nest on, or near the ground. It is true that the chiff-chaff was here as early as March 18, and a wheatear had a clutch of eggs—in a rabbit-hole—many days ago ; but the general migration was a little late, and the delay before building is considerable. Nightingales were very late, though a few came early. And they are in great numbers. We had begun to be afraid that they had almost vanished from some parts of Hertfordshire and Bedfordshire. Naturalists had occasion to fear that the little owl (which had learnt to listen to the song) had destroyed the families whose inherited instinct it is to nest near London on the north. But to-day there are nightingales in full song at several places where they have been missed for years. Harpenden is one. As for Surrey, it is populous with them as well as with cuckoos. Both maintain almost continuous song day and night in favourite haunts round about Guildford. One ardent cricketer, with whom I was playing on a pretty private ground between two spinneys, snatching an innings between the showers, complained that the noise of these two birds at the edge of the field made it quite impossible to bat properly ! The volume of song may exaggerate the number of birds. All birds sing most when the air is full of moisture. They are all "storm-cocks" in this sense. May, and this first week of June, have been merry with a flood of song, liquid and clear beyond the normal. Perhaps the compulsory cessation from nesting activity has further whetted the whistles. This remains to many of us the one real compensation for the deluges that turned our garden poppies pale and broke our delphiniums.

AN ENGLISH VIRTUE

How hurried, how breathless is the course of the seasons in lands less blessed than this June 16 England. It has been my fortune this year to experience the clime of the Continent as well as the island. You might think at first blush that latitude for latitude the difference was small. The migrant birds arrive at much the same date. The degree of rain and gloom and sunshine along the middle Rhine is of much the same proportion as in the Thames Valley. Our weather is very much like German weather. On paper the hours when the may or chestnut or apple bloom and set their fruit are similar. The wheat straw in Germany and in England would measure much the same length on any particular day; and haysel and harvest will probably begin within the same week.

So it seems to some. There is a cardinal difference, nevertheless. Everything in England is longer drawn out, the gradation more delicate, the progress and regress of the seasons less emphatic. This year spring began in England a good fortnight before it began in Germany, if we take the first budding of the trees and bushes and the germination of seeds as a test. But you would be wrong to infer that this portended an earlier blooming or even an earlier burgeoning into full leaf. The Continental trees caught up the English trees, and very rapidly passed them in the race. At one moment the seasons were level. If you took your comparative notes at a particular date you would find absolute similarity, but over a six weeks' stretch any diarist would detect the superior speed of the Continental season, which, indeed, gives even the less observant an impression of suddenness very rare in English annals. Our leaves, our flowers, our fruit

last longer, mature more slowly than in any Continental country ; and in this perhaps lies the master charm of our island.

It is common among the critics of our weather and our agriculture to lament, at least by inference, the slowness of our days. They say that the rapidly ripened grains of Alberta or what corn-growing country you please, have a quality of "strength" (the word is technical) quite unattainable in England ; and that we should not attempt to compete with more fortunate lands in the growing of this thing and that. They speak by the book, but read only half of it. Most English wheat takes nine or even ten months to come to harvest. If we reckon the period of maturing, when it rests in stook, some of it goes through a whole year of progress. Now the law is that the more slowly the grain comes to maturity the heavier the weight of crop ; *and the English farmer can produce a greater bulk of grain off an acre than any farmer in the world*,—the italics may be allowed on behalf of England—because his seasons are more gradual. This does not mean, of course, that it is better to grow wheat in England than Canada ; but it is wise and a proper source of pleasure not to forget our own merits, especially when they are backed by scientific tests.

What may be called the comparative abruptness of spring on the Continent is emphasised by the arrival of the migrant birds. In England blackbirds, thrushes, robins and wrens sing off and on most of the year. Abroad song bursts from an utter silence and reaches a volume greater than in England. Nightingales especially are much more numerous in France and Germany than with us ; and we miss altogether a few very tuneful and very loud singers. What a pity that we cannot persuade the golden oriole to visit England regularly ! He does not possess the melody of the blackbird—surely the finest of all singers—but the quality of the note is liquid and rich beyond any hedge-

row sound. It suggests the blackbird, but has more volume, more passion. It rings from the tree-tops like a silver bell ; and shy though the bird is, it will nest in the very town, if the trees are thick enough and leafy enough. When you come with much trouble to a sight of the golden wings, you have the thrill of a discoverer. And how dashing its flight, when it circles round the home tree, as if obedient to some centrifugal force. Certainly the oriole should be made free of England, where his visits are altogether too rare. In his train we should like to see that adept mimic of other songs, the icterine warbler, which many of us learned to enjoy along the battle front in France, and, not less, the little crested lark. But the oriole is the king ; and never did I more enjoy listening to a bird and looking at it than in the grove growing round one of the dismantled forts of Cologne. Perhaps a suggestion of symbolic peace helped to clinch the pleasure.

A MIDSUMMER SWARM

As soon as the sun came out, hot in a yeasty atmosphere, and the rain ceased (except for short June 22 tropical intervals), our hive bees broke out very suddenly into their seasonal mania for swarming. Local bee experts have had no rest. They were called this way and that. The swarms were so many in my village, that some busy bee-keepers gained several more than they lost ; and it was impossible so much as to guess the origin of many, though country people are often very much alert to follow the migrants. The biggest swarm appeared in the garden of the public house. The only handy receptacle was an old-fashioned skep ; and into this the bees were bundled with rough suddenness. You would have thought the hardy taker would

scarcely have lived through the commotion. He himself records the occasion when he received 300 stings in the arm; and was none the worse. He confessed to feeling in consequence "slight fluttering of the heart," but it was followed on the next day by a sense of exuberant well-being, well worth the slight discomfort. The man has more than an affection for bees. The only reason why he does not enjoy being stung is that the bee loses its life; for he is an absolute believer in the medicinal value of the poison as a cure for rheumatism and other human maladies.

On this occasion the bees, which were presented to me—a magnificent gift indeed!—showed little sign of disturbance or irritation. The sticky mass—a falling swarm always has a facetious resemblance to thick treacle—toppled under his blows into the skep, until they filled it, full to the brim. Was ever such a powerful swarm? The bee-keeper estimated the weight of the bees alone at seven pounds. It was quite a serious job to carry the skep to the waiting and prepared hive a quarter of a mile off. When he slipped off the cloth that held the multitude snug within the skep, almost enough bees to constitute a swarm fell off on to the ground; but they hardly counted. Peering underneath, you saw that the skep still seemed full to the brim. All the remainder were dumped into the hive from above, and the top made trim and tight with a cloth tucked under the wooden roof. Up to this point no one was stung. The fallen remnant, clinging together and creeping stickily about the cloth, laid on the ground in front of the hive, were now blown gently with smoke towards the entrance slit. How docile and tame they were! The ranks, as steadily as you could wish, climbed the alighting board and made their way to join the rest through the proper entrance. The few stragglers that wished to follow the trail of the bulk of the swarm about the edges of the roof were brushed off with an old hat brush and the work was done.

Many thousand bees were snug in their new, and, it is hoped, permanent home.

It is said that the best strains in Europe come from a mixture of English and Italian stock. These bees were a cross between the black English bee and the much striped Italian ; and they give evidence, if not of brains, of a singular gift of docility and hard work. If all goes well, they may collect 50 lb. of honey for their owner before the summer is out.

"Sic vos non vobis, mellificatis apes" ; but they shall have food enough and warmth enough and expert vigilance enough the year through. The next morning, when a long rank were busy at the entrance fanning vigorously to keep the hive cool, the bee-man was there again to open wider the air-hole beneath the floor, and to lift the roof and watch progress, and to give all possible aid to ventilation. His son was with him. "I want the boy to learn confidence," he said. So the boy had taken his share in the removal without covering the bare gap at the knees and enjoyed an inspiring sting or two in the later stages of the operation. He is already confident, for the stings did not swell unduly. The bees settled down at once—as they do not always ; but they have to learn, as well as accept, a new home. You could see them the next morning flying round and round in enlarging circles, irresistibly suggestive of carrier pigeons, as if they too were getting their neighbourhood by heart. Happily, quite close by, south of the entrance of the hive, was just such a harvest field as they like—a big bed of abandoned but not eradicated brussels-sprout, flowering profusely.

Beekeeping is enjoying a revival. Throughout the neighbourhood the decimated colonies are rapidly making good their numbers ; and though this *"is"*, swarms are not ideally early, they are early enough to do a season's work. Quite literally, and *after all* of any meaning of the words, "a swarm raw across stalks

may be worth not one but two "loads of hay." A little delay may make small difference. For witness a June swarm in the neighbourhood is recorded as having collected 125 lb. of marketable honey. And such honey! What may not seven pounds of bees gather in the next two months? Perhaps some mathematician will weigh a worker bee (Italian-English cross) and reckon, first how many bees go to the pound, and second, how much work each bee must do a day to accumulate say 100 lb. in 2½ months!

THE MOWER'S RHYTHM

A FAVOURITE path runs quite straight, first through a hayfield, then a wheatfield, then along a June 24 fence broken by large bushes of pink and white dog-rose. Three gorgeous chapters in the book of June are there.

The hay will be cut on Monday, when haysel will be general in the parish. Some little space has been already cut by the scythe, an instrument that fewer and fewer can use with skill—so the old men say—and fewer yet sharpen. An old Frenchman used to say the same to me in France, in the war. He spent at least an hour every day in perfecting the edge of his weapon, partly with a whetstone, partly with a hammer. You heard him tap, tap, tapping at 4 a.m. or earlier, and the blade gleamed even in the deep shade of the beeches where he slept beside it for an hour or two hours at mid-day. He could mow a lawn with it, let alone a hayfield. His local reputation depended on his scythe. Through dogstail, plantain, clover or corn it slid its subtle way with a rhythmic ease that *josu*, the wielder still unwearied at the end of a sixteen-straggley. He worked to music, swung to a charmed of the swansed on melodious rhythm. The golden off with an old h.o his labour at sunrise, and the field

crickets hit his swinging arms in their short nocturnal flight. He was famous at the real harvest, but hay-sel was his passion. The dark lines trodden by his feet were as straight as the swathe was level; and he cut so close to the root that the blade passed under the frogs, murdered by lesser artists. When he ceased for the mid-day meal (which with talk and slumber lasted from three to four hours) he picked a bouquet from his morning work, a bouquet of plantain and clover and dandelion leaves for his daughter's rabbits. His wife was dead. When alive she used to follow him in the corn harvest and bind the sheaves as he cut them; but, as the extravagant admirers of the village said, "*Elle avait de quoi, elle avait de quoi.*" She had her work cut out, and, like Black Auster, toiled in vain behind this tireless pupil of old Time. It may be that unwittingly he mowed her down.

But that was France in the war. This is peaceful England. The hay in Herts grows on a gravel soil, and is therefore light, but rich and lovely none the less, and in this delicious June you see an infinitude of delicate colour through the thin stalks of bent-grass and poa, of foxtail and "totter grass." In a dense nap of yellow mellilot are daisies, long in the stalk and graceful, red clover and white clover, the best fodder plant that grows, and the bird's foot trefoil. The ruddy flowers of an occasional dock and pink flowers of the plantain are just lower than the heads of the taller bents, and seeds of the lesser hawk-weeds, with a few bladder campions stand conspicuous. Close by speedwells are still blue. Low though the crop is, the layers of yellow and white and mauve colour announce that the clovers will yield as rich a food almost as the flowers of the Swiss Alpine meadow, where all that grows is a maker of milk. And short though it is, it is delicious to mow with the scythe. You may lay the blade delicately down without the swish of any initial impetus, and the edge will draw across stalks

sappy with generous rains and soft with rapid growth. No work gives a sense of quite such solid pleasure. The poet may write with ecstasy of "the feel of a perfect fourer." We have books on the complete golfer, tennis player, or what not, with the precisest diagrams of action. Has any critic in this secondary age ever analysed the secret of the rhythm of the mower. Though great artists stand out here and there, most village boys can catch the rhythm and make a fair stroke without "schlafing the turf" or "smothering the shot." If the community knew what was really worth doing, knew where real satisfying enjoyment lay, we should have available a series of books, with diagrams and instantaneous photographs, explaining for all to learn the secrets of "the Happy Mower," or "the Complete Digger." Here are games indeed! At the end of the hayfield a pheasant and many chicks ran in and out—and that is why the walk ended with the grass and the blue wheat, and the red and white dog roses were left to another day.

HAYSEL

HAYSEL has well begun. The word is a word that in certain districts comes quite as naturally June 28 to the countryman's lips as the word harvest, but, like a number of other rural words and phrases, has almost an affected ring in the ears of our too urban people. They would no more think of using it seriously than of saying that their garden plot was "in good heart," a phrase common to the vocabulary of the least poetic of our farmers. It is the duty of countrymen to insist that such fine old English terms prevail in the language to the end that the thing they toiled for may also become of general concern. Haysel then, to come from the word to the thing, is being celebrated east and west and north and south,

rather earlier than the season warrants, according to the older notions. But there is a new fashion to cut the grass younger than it used to be cut, on the theory that the immature grass is the more full of nutriment. But æsthetically and as a naturalist one sees it fall with a certain pang. How exceedingly beautiful rough meadow hay can be! Into what graceful patterns and colours combine the silver-headed foxtails, browned with heavy pollen, the broadly branching cocksfoot, the more delicate fescues (what courage Tennyson showed to write in popular verse of "the froth-fly on the fescue") and the most delicate poas! If the meadow is a little sour what a sunset hue is lent by the dock and sorrel heads, and from what a scape of glowing tints the moon-daisies look out! Clinging to the bents and visible only to those who know what to look for are hosts of little moths and blue butterflies, and the number of mice hidden in the mellilot undergrowth can only be inferred from the quantity of homeless wanderers appearing in strange places when the hay is cut.

The early cutting is bad for more magnificent animals than the moths, devoured in quantity by wagtails that dance just behind the cutters, or the mice hunted at night by the owls. Harvesters a hundred and more years ago routed with their busy scythes the bustards that were almost as common as they still are, for example, in Queensland where, even from the trains, you may watch them standing high in the grasses. Twenty years ago more expert, more ruthless, machines routed the corn-crakes, though happily they are still as numerous as ever in the West—not least in the neighbourhood of Belfast. May not this earlier mowing do harm also to the partridge? Many countrymen doubtless are devoted to the partridge after the manner of Tom Tulliver, who was "very fond of birds, that is, of throwing stones at them." But every one who has studied the live species thinks of it first in

terms of maternity. Both male and female are ideal parents. I saw this week at the edge of a hayfield an adorable picture of intelligent devotion. My spaniel flushed a pair with very small chicks. Both birds played the shamming trick better than I ever saw it. They tumbled about not more than three yards in front of the dog with a wholly convincing appearance of wounded incapacity. One fairly fell on the ground, and the other bird lit as awkwardly as an uninstructed young rook. So close were they to the spaniel that they looked in real danger, though we knew their game. So, it seemed, did the dog, who is singularly clever. He looked at them without any excitement and turned aside with an access of dignity. Instantly the finer actor of the two parents—which one I could not say—flew back within a foot or two of the dog's nose, afraid, doubtless, that he was returning to the neighbourhood of the brood. He looked as if he meant to mob him as swallows will mob a cat or a hawk. Possibly she—or he—would have gone to such extremity if he had retraced his steps to where the chicks were lurking, but he came to heel, more afraid that he had sinned against sporting laws than of punishment from his quarry.

And is this early cutting wholly wise botanically? The bulk of the grasses, doubtless, are perennial. They benefit rather than lose by the drastic pruning before the ripening of the seeds is complete, and yield a more generous aftermath. But the idea of seed is that it should grow, and the annual grasses are often the sweetest. Some one should analyse the species and varieties of a field before and after it has undergone this severe treatment from the cutters. Like Burns's "cruel coulter," these have, I fear, cut up more than their usual number of nests of larks as well as partridges, for many deserted in the intense cold of their proper date and are many weeks behind. Poor things, they must try once again.



You will scarcely find July in the poets, except just here and there in such catalogues of all the months as Spenser and William Morris composed. The poets seem nearly as subservient to the season as the birds. July is the quietest of all the months among the birds, though perhaps the noisiest among the insects. Probably Keats was thinking of July when he wrote :

" The poetry of earth is never dead
 When all the birds are faint with the hot sun
 That is the grasshopper's—he takes the lead
 In summer luxury—he has never done
 With his delights ; for when tired out with fun
 He rests at ease beneath some pleasant weed "

The July countryside is like some beach at a still high tide. The earth is full and quiet. Leaves and bents neither grow nor decay. Summer stays still to enjoy herself. It may be said to be the one month that has little in it either of the past or the coming season. The vitality of many birds is at its very lowest. The warblers seem almost to vanish. The duck have changed their plumage so thoroughly that they can scarcely fly ; and even our most vigorous native blackbirds will scarcely take the trouble to top the hedge, when you disturb them in the dusty road.

But it is the most gorgeous of the months. The more regal colours prevail among the flowers and many of the more resplendent butterflies—especially the Fritillaries—and moths and dragon fly emerge from their pupal slumber.

If there is little poetry inspired by July there is a good deal of doggerel. Every country man knows:

A swarm of bees in June
Is worth a silver spoon.
A swarm of bees in July
Is not worth a fly."

This does not mean, as some commentator has suggested, that July is not a great honey month. It is one of the greatest; but if the hive sends off subsidiary swarms so late the bee-keeper suffers every way. The old swarm will be weaker and the new swarm will scarcely gather more than enough for their winter sustenance. St. Swithin has inspired more rustic versifiers than any saint, and his feast is on the middle day of July. How anxiously most villagers watch the weather on the 15th and quote in some form or other:

" St. Swithin's day if it do rain
For forty days it will remain
St. Swithin's day if it be fair
For forty days it will rain nae mair."

Though July gives more wealth of water than other months the propheey has little justification.

GARDEN BIRDS

It is difficult to be in Oxford and not meditate on gardens; and if on gardens then on birds. July 1 Birds love a garden, even better than we do; and garden-builders, like all who work for love of things, build better than they know. The lawn, the *tapis vert* (and this most often is the garden's

self, to which the flowers are no more than appended bracelets or necklaces), has attractions rarely found in nature, yet greatly desired by birds. They enjoy, blackbird-wise, a run or, chaffinch fashion, a hop. Without a smooth, flat space they miss freedom for many agreeable gestures, just as a flycatcher is handicapped without some leafless perch, such as the supports of a wire netting or the top of a tennis post. The mere accident that they are on the ground, moving about like men or dogs, seems to breed a certain tame-ness and companionship foreign to the mere dweller on trees and in air.

We have all noted the delight of the pied wagtail in any lawn, how he plays and dances and sallies playfully, as well as in pursuit of food. One of them who became a household friend used to play a conscious game with a puppy, teasing it and skipping just out of reach till it became almost puppy-like in the energy of its aimless gambolling. Both dog and bird obviously enjoyed the game. In two beautifully lawned gardens, well known to me, one in Surrey, one in Huntingdonshire, the wagtails can never bear to leave even temporarily the neighbourhood of the lawn. A number of pairs built their nests in the ivied wall of the house alongside, that the very first playground of the young might be the short, sweet grass where nothing interfered with the dancing of their tiny feet. But the wagtail—much the most playful of all birds, wild or in captivity—is not the tamest. This week, in an Oxford garden, thrushes, chaffinches, and robins all came up within a yard or two of the company sitting on the lawn, and doubtless with a little trouble could have been persuaded to feed from the hand. The robin perched on the supports of the chairs, the chaffinch hopped with a ludicrous deliberation to within reach of the crumbs from the tea-table, and the thrush, not to be outdone, began a loud song there from the ground almost at our feet. I do not remember ever to have

heard a groundling so sing. The feeling was that he was singing to us or with us, having found new friends.

The soft smooth lawn may breed too great confidence in birds. I saw a young blackbird pitch without that check of the wings and throwing up of the head that is usual with all birds, and he went head over heels, but without damage. The lawn was very soft—too soft—for the specialists who like nothing but grass. But if games are not to be played, there is much to be said for the presence of such patches of yellow mellilot as decorated the floor of this Oxford garden. The flowers, even on one of the dull days (common to this summer), looked like a patch of sunlight by the edge of the leaning apple tree. And this apple tree bore more than apples. Among other residents it housed a toad up the hollow trunk. When his huntings in the dew of night were over he would retire across the lawn and climb some two feet up the inside of the trunk, to repose in the dank gloom that is the delight of the species. I knew of another that lived in the hole made by an ex-tennis post, whence he would daily emerge in the gloaming for his solemn and aged "constitutional" over the lawn.

In the sanctuary of a garden—and every catless garden is a sanctuary—the birds so far lose their instinctive fears that they come to change habits. By the edge of this Oxford lawn a greenfinch has built in a box set up for tits, so surrendering his native preference for an open site. It is true that the hole was absurdly big and the box shallow, but, even so, it was as little the sort of place which a wild greenfinch would choose, as the ground was a proper perch for a singing thrush.

Oxford, perhaps, as well as the garden, has its influence on the birds. The neighbourhood is singularly rich in species. Where else in the spring do you see so many yellow wagtails? It has been observed that the Oxford thrushes vary strangely in song, taking on

more nightingale notes. Certainly the birds are tamer than in most places, though in my experience birds grow in friendliness the farther west you go till they reach their pitch of amicable boldness in Ireland. Lawns and Oxford have long been associated together, and most of us, perhaps, remember the grass rather than the flowers whatever garden we think of, unless it be the most lovely Botanic Gardens. Yet it is a little ungracious to let the friendly birds drive out the flowers, and I should like to record what a quaint chintz-like effect greeted you as the gate was opened and you walked over red bricks between a tangle of blue flax, of pinks, iris, snapdragon, and rock roses.

ON THE LINKS

ON to the common, which is also a golf links, descends every morning very early a great pack of July 6 starlings giving an unnecessary suggestion of autumn to a full summer day. They are more multitudinous than they were, but the pack was already a pack, a real congregation, before the nesting season was over. They come for food. The low grasses and flowers of this common are an even richer feeding ground, while the dew is on them, than most meadows. Some writer laid it down in a printed book that no bit of land is so full of life as a field of wheat. Surely it is not so. Blackbirds are surprisingly fond of a wheat field, though a bean field is their favourite haunt. Rabbits collect in fair number in the ripened corn, and sparrows so enjoy the surrounding hedges that the town-bred birds leave the streets for this holiday place. But the middle of the field is almost like a forest, a great wood where few animals care to lose themselves. Even those tiniest of mice that

suspend their nests from the straws seem to prefer the verge. Certainly the common—if the golfers are not too numerous—out-populates the cultivated field, in insect life and bird life, perhaps even in mouse life. The number of pipits is immense, and their nests—too often rifled—numerous enough to please Mr. Chance's most prolific cuckoos. The chats—whinchat and stonechat—just begin to arrive, for they nest elsewhere, but abide many weeks on the common. A night-jar is often to be flushed. The partridges jug there; and like the starlings choose the place in the very early hours. Commoners who keep hens and ducks round its edges say that the birds need little food besides, if they are allowed to join the wild birds soon after sunrise.

The massing of the starlings before the due date and in this place is of interest because it gives a hint perhaps of the origin of the instinct of congregation. Partridge coveys pack together late in the year, when food is scarce, and many pairs of eyes are better than one; and the food they seek is not at that date widely distributed. However that may be, there to-day are the packed starlings comfortably anticipating autumn.

Other products of autumn have appeared on the common. One morning during the week you might have thought that forgetful golfers had left delightfully new golf balls lying all about the fairway. "What else could sit up so white and obvious?" some "little Wilhelmine" might ask of the aged greenkeeper. He would answer shortly, "Puff-balls." They have sprung up here, there, and everywhere well before their time, encouraged by some queer combination of warmth and wet. In some places they are ludicrously apparent. In others they have sprung up in a sheet of white bedstraw, one of the most pleasant flowers of the common except to golfers, whose balls are protectively coloured to it, as they are among innumerable daisies on such links as Portrush. The puff-balls

have their parallel in the meadows, where quite a crop of horse-mushrooms are up a month or two too soon.

The gorse, too, gives a hint of autumn out of season. It is quite flowerless ; and if you walk where the bushes are frequent you will hear, not once or twice as the sun grows hotter, the sharp crack of a seed case giving its queer spiral jerk to the little missile seeds. Yet on the common more certainly than anywhere else you may detect the exact time of year. The ling is everywhere ; and ling is none of your fickle, gullible plants to be cheated of the date. It flowers just when it ought to flower, rises to a climax, and descends with much more attention to the almanac than any freak of weather. How dead it looks till its hour strikes ! but it is "generally shamming when it's dead." There will be no real sense of autumn on the links till the purple splendour that is coming begins to fade to brown.

In a neighbour's garden near the common, but miles away in character, a queer duel between tits and bumble bees has reached its last stage. A nesting-box was disputed like any mediæval castle between Saxons and Danes. After an initial defeat the tits built for a second time and laid a full clutch. For four long weeks did the patient parent incubate the clutch, but for some reason—was it nervous disturbance due to fear of attack—none of the eggs proved fertile, and at last the bird left them in despair. Instantly the bees returned, and now they for the second time are composing a nest within the relics of the tits' nest. The drama has been watched by many observers, and this last phase is now little more than a week old. The bees remain, and doubtless will remain, masters of the field. There is one species of bumble peculiarly fond of birds' nests as a home ; but they usually select the old nest of a blackbird or thrush that has already seen its family into the world. If they compete with any one it is with the mice, or perhaps a stoat or weazel.

BELATED GROWTH

THE period of rapid, almost ecstatic, growth which occurs once a year in the life of most plants, July 9 has been strangely retarded this summer, but is, on that account, perhaps the more pleasing to watch. Such a late start must be very rare in the records, and is not easy to explain. No refreshing rain stirred the roots, and the soil was not damp beneath to give the belated sun its chance. But, whatever the reason, we have enjoyed the daily excitement—it is not too big a word for the mood of the eager gardener—of beholding a new spring-like energy in a great variety of plants and of trees. All manner of annuals—poppies, nasturtiums, love-in-the-mist, eschscholtzias, which had quite refused to budge, suddenly in late June recovered their energy. They will flower two months later than in '21.

The same thing is noticed on the farms. The wheat has shot up and burst into ear with rare suddenness, and much of the straw which was dwarf is now at least of usual length. The bines of beans, which looked almost cretinous, and the late peas have raced up and round their sticks. Almost all trees carry evidence of their "second spring." The chestnuts, that had nearly withered away, have shoots at the top as light in colour as the older leaves are dark; many lilacs are in spring leafage, and you may find a like appearance on some of the elms, where such an event is much rarer. Apples and pears are flowering again, trying vainly but pluckily for the fruit cut off by late frost. Both because of this second start and because of the belated growth, July is fuller of young colour than we have known it. The dog-roses and field-roses and sweetbriars—three of our four native species of rose—are at their very best, though the hay-harvest, itself

late, is nearly over. They are blooming simultaneously with the more gorgeous and more sophisticated tea and perpetual roses of the garden, and many of the climbers have not even yet come to blossom.

In spite of much lamentation, I should call the season a season of exceptional bloom. The specialists in sweet peas say that they have never in their experience known quite such wealth of blossom in spite of the year's sunlessness. You can scarcely bear to look at some of the trial grounds in the eastern counties. The profusion is a notable testimonial to the wisdom of following nature. The wild annual sows its seed in autumn, not spring—as Shelley knew, though perhaps he did not notice how many germinate also in autumn :

"O Thou
Who chariotest to their dark wintry bed
The winged seeds, where they lie cold and low,
Each like a corpse within its grave, until
Thine azure sister of the spring shall blow
Her clarion."

Through this dark summer almost all seeds sown in autumn—wheat and sweet peas are two good examples—have flourished greatly, because both were already strong plants before winter came, strong enough to bear its worst excesses. They were far from lying "cold and low" like corpses. The peas ran their risk, of course, but perhaps it was the lesser of the two. Certainly we have seldom if ever seen such a gap in flowering between the autumn-sown and the spring-sown seeds, or such superiority in the natural method.

It was a gloomy summer up to the longest day; and the gloom has helped to bring such a plague of fly as seldom was known. Roses and fruit trees—plums above others—have been too foul so much as to touch. Nevertheless, and notwithstanding, we have been saved by gloom. The rainfall in the eastern

counties has been as small as it was in '21, the year of the great drought, but what rain has fallen has evaporated so slowly that it has served for double the quantity. The moisture has not left the subsoil nor been too rapidly breathed out of the leaves. So, most happily, it has come about that this rare combination of dryness and darkness has in some measure brought its own cure. Out of the gloom has come forth colour, such colour as rivals the very tropics, along with such greenness as you can scarcely find outside the British Isles.

GARDEN COLOUR

YES, indomitable colour lights the garden this month as last. The veriest amateurs among us July 13 have now our own seedling delphiniums.

They have been six-foot high, in every gradation from Cambridge to Oxford blue, with intrusive streaks of purple and points of white and black. An unusual number of spikes have been misshapen, twisted by the schism of what is called "fasciation," as happens after wet periods. But these oddities have even increased the momentum of the colour. One portentous head of flowers is before me. It is flat, three inches across, every flower crushed tightly into the next. The whole possesses in exaggerated form the peculiar quality of intense blue. The colour seems to emanate as a film, a net, a mist, and to hang round the real source, as if there was too great a weight of vibration for the petals to hold without dispersion.

Such colour is not seen for the most part in nature in sober, restful England, though a Norfolk poppy field or a Welsh hillside may be red and yellow enough almost to strain the eyes, or a bluebell wood may drench us in its lake-like depth. But the truth is that

much of the brilliance of the garden exceeds the brilliance of nature, and is the direct gift of human science.

At a recent open-air show were to be seen two round beds planted with that most gem-like of all annuals, the African nemesia. One was planted solely with the variety that may be described as a creamy yellow; the other with a rainbow mixture, ruby and turquoise tints prevailing; but it would be difficult to pick a shade that was missing. It is scarcely credible, but it is true, that all the colours in the bigger rainbow bed had been evolved during the last thirty years out of the yellow, which is the prevailing colour in the home of the flower. If there exists a diametric difference between one colour and another you would say it separates the light blue from the yellow. Yet this rare hue has been extracted from that common hue merely by patient selection, by picking out each year any plant that turned aside at all from the parental type. Crossing and hybridisation came later. The violent breaks were due to consecutive breeding from odd specimens.

The bank of the stream that runs alongside my garden is brilliant with Shirley poppies, self-sown for the third year. About a quarter have returned to the colour of the wild poppy from which they were rescued by the ingenious padre who was their creator. By selection he eliminated the black centre and persuaded the original colour to dilute itself and leak out into all sorts of patterns. The poppies are not so salient an example as the nemesias, because, after all, most of the shades in the Shirley poppy remain red. The variety is due to the absence of black and the varying admixture of red, pink, and white. Again, the long bed in front of the window is a marvellous tangle of blue, purple, and red. Delphiniums of most shades of blue are mixed up with Canterbury bells in pink and purple, with cups that would hold as much

as an old-fashioned peg measure. Struggling among the bells and spikes are numberless scarlet heads of the popular geum—new this century—which we know as Mrs. Bradshaw. That scarlet has been evolved from the dusky, dull mauve of the old geum; and since Mrs. Bradshaw's birth a delightful orange has come to light. The colours of all the three species composing this tangle have been for the most part *made*. They were not found; and they are kept alive solely by watchful specialists alert to prevent reversion to type.

It is generally believed that the Ancients could not see colour as we can see it. The adjectives of colour in Greek and Latin are strangely few, though Homer seems to excel most of his successors in efforts to describe such effects as light on the sea. But for the most part "light" and "dark" are good enough even for the poets. If they came to earth, what would they make of a new garden catalogue, with its "terra-cotta-salmon," or "horizon-blue," or "rich cinnabar," or "blue-veined picotee?" A good deal of this naming is *outré* and silly. In one catalogue, presumably for want of a colour word, a rose named *François Coppée* is described with delightful lack of humour as "somewhat after the style of Victor Hugo!" But in general the English gardener of to-day does more than see colours to which earlier races were blind. He has more colours to see. He lives actually in a brighter world. The hues natural to the tropics—as wonderful in the fish of the Pacific as the flowers on the shore—are summoned and presented to our Northern vision; and are a lasting possession. Our homes riot in colour, much of it created for us by the steady, persistent skill of our own expert gardeners. They deserve Swift's blessing on the man who made two blades grow where one grew before. They have persuaded a dozen colours to flame out of one dull glow.

A NORFOLK THUNDERSTORM

ONE of the fiercest thunderstorms in my memory fell this afternoon; and its approach held a July 15 sort of nightmare threat. The poet Shelley would have taken notes as ardently as any meteorological expert. A yellow gloom began to fill the bright sky, but the invader took on no form, scarcely a corporeal presence. Soon in the murk appeared the mouths of caverns—round and a little jagged. Then the portals, growing each moment darker, though they enclosed a luminous core somewhere back in the depths, began to thrust out blunt tentacles of strange shapes, waving visibly as if greedy of some unseen prey. The air was still hot and very quiet, when you noticed that the south-easterly sky was draped in material darkness so dense that the other clouds, the tentacles, the doorways of the caverns became by comparison gray and mauve. Very quickly after this the black and shapeless east began to envelop the west, as if the tentacles had absorbed all else into the inky maw; and when nearly every form on which the eye could rest was clean vanished a strange coolness fell, the still trees waved their arms, in sudden frantic agitation, with quick unusual strokes. A sense of noise not much more definite than the cloud from the east gave place to an individual boom, as if the edge of the battle, the line of the artillery, were reached. Fine steely streaks patterned the easterly night, like cracks in glass. The rain fell in single drops, tears just not withheld in a mood of passionate agony. Then, beyond all hope, the agony was over. The lightning, the thunder, the rain broke all restraint, burst into a boisterous hysteria as if incredible tidings had anticipated unimaginable disaster. That is how the coming of last week's thunderstorm appeared to my senses.

Animals behaved very differently. An experienced spaniel looked at the lightning, you would say, with a mild wonder. A Sealyham puppy screamed in terror. The birds for the most part chattered and drew into the trees, but the swifts took on the part of stormy petrels. They screamed with more than their usual witch-like sharpness, flew low, and you could hear quite loud the rush of their wings. The rooks, I think, suffered most up there in the defenceless elms; and next perhaps the ground birds. In most years the June thunderstorms kill a pitiable number of partridges, but, late though the nesting is, this immense deluge was not prolonged enough to do much harm except in very low-lying places, where the ground was flooded. And how the land enjoyed it! Though flowers were knocked to pieces, though the ground under the apples was a mess of windfalls—the less lusty members of a good crop in the garden where I watched the storm—the impetus to growth was delicious to watch. How other counties which missed the deluge—and it was missed as near London as Reading—envied Middlesex and the East! London was very greedy. Fancy wasting hundreds of tons to the acre of perfectly good rain!

On the eve of the storm some of us had an experience quite new in our chronicles. Walking along a Norfolk hedgerow, between Cromer and Sheringham, we were literally mobbed by cockchafers. They were as numerous as a swarm of bees. Even in the failing light you could see them thick above the hedge, and at every moment a certain number buzzed round your head and bumped into your neck. I once saw something like a plague of the early variety of cockchafer in France during the summer of 1916, but even that was nothing like this. It may be that this multiplication is the sequel to the warmth of last year. The cockchafer grub lives in the roots of the grasses for various periods, eating portentously. If any creature

is repulsive, this grub is, a thing all stomach, only just capable enough of movement to pass from one root to the next. Last year the grass was in large measure destroyed by these grubs, greedy to reach the development necessary for the metamorphosis into this winged citizen of the summer night. Have other people in other places noticed any special emergence?

BEES AND SEEDLINGS

As an observer goes about reaping the harvest of his eye, but never, perhaps, threshing it out or July 20 milling the grain as a man of science would, he must often wonder how the writers of books come to be so certain of their facts. Do plants and animals really behave with the regularity alleged against them? Some instances from the July garden prompt the question. Close against the stem of a small rose bush has sprung up a seedling laburnum, sown from the tree overhanging the Elizabethan wall. Almost all the leaves of this seedling have been cut into segments. Some look not unlike the Mad Hatter's teacup after he had mistaken it for bread and butter—the excisions are not less convincingly semi-circular. Others have lost fragments of a more oval pattern, and many leaves are so thoroughly carved up that the three, or even four, excisions have left little but the midrib behind. Close by, a rose bush has been treated in like manner, though the artist, in snipping, has not been quite so parsimonious of his stuff, probably because the rose leaves are more numerous. But in both cases she has been an epicure. She has chosen only the tenderer, more delicate tissue, the silkiest stuff. Nor has any plant but the rose and laburnum been chosen. The pieces were taken out some while ago, as you may tell by the narrow line of brownness along the cut edge.

Well, we all know that the tailor is the leaf-cutting bee, and most of us at some time or another have seen the insect carry off the green pieces rolled up between its legs—how quaint the bee looks on the wing, as it were riding on a broomstick!—and have found the neatly tailored cells in the crumbling wood of some gate-post or pergola pole or rotted tree trunk. But there are leaf-cutters and leaf-cutters, as there are bumbles and bumbles, or andrenas and andrenas. It is at this point that the dogmatism of the text-books raises certain doubts. They assert that the variety most of us know best—its Roman-Greek title is *Megachile centuncularis*—only uses rose-leaves for its cells, but that Willoughby's leaf-cutter has the more catholic taste, using rose, laburnum, or sallow, whichever is handiest. I have no proof—and this year have found no nests—though the M. C. leaf-cutter is very much commoner than the M. W. leaf-cutter; but every year the laburnums are preferred before the roses; some years no roses are touched. How many years ago is it that the laburnum was introduced into common use in England? At any rate, our native bees must have learnt at some date or other to desert native trees for the exotic; and are the men of science quite sure that leaf-cutter M. C. is not now among the company of the adapters? Another year the test shall be made, for the bee is very common indeed, though doubtless not so common as *Bombus lapidarius* or *terrestris* or even *Bombus hortorum*.

Writers of garden catalogues, and, indeed, of garden books, seem to some of us to be too precise in their division of plants into annuals, biennials, and perennials. They hardly grant how wobbly is the line between the classes. For example, some of the mallows may be either annual or perennial, according to the soil they find. Most of the biennials have the capacity to be perennial, and some have quite achieved their immortality. The theory of the biennial is that it forms a

food reserve one year, uses this later to provide sustenance for the production of flower and seed and that when this is achieved it dies incontinent. But it doesn't! It will have nothing to do with this pretty theory of dying sweetly, its end accomplished. Look at the snapdragon and sweet-william that are self-sown low down in the brick wall of this house, splashed with the muddy rain of some four centuries. The deep-red flower-heads have no floweret missing. The leaves bespeak glorious vigour as they compete with the lustiness of the snapdragons similarly rooted on each side. Who said either were biennials? The brick path beneath is thickly green with their seedlings from last year's flowers. Last winter was long and severe. The toughest blasts came from the east, towards which the wall looks. But the plants had their roots in the grit that is most congenial to them, and they heeded neither the winter's rages nor the classification of the garden catalogue. The farmer is told that the small thistle is perennial—a grim and unquestionable truth—but as to the big thistle being biennial let him cut it before it flowers and watch whether it dies after the second year, as it should, or the third or the fourth. Doubtless these things are known, but the habit of writers to pretend that nature follows strict rules and regulations remains ineradicable. Francis Bacon's third fallacy still holds the field.

ON THE DART

WHAT is the chief distinction between easterly and westerly England, in the face of the country, July 22 and in the birds and plants?

I think what a traveller feels most, as he takes the unbroken leap from London to Exeter, is the growing luxuriance of shrub or shrubby growth

taking the place of the splendour of trees. If he travels farther—to Penzance or Haverfordwest—the tree as a separate, lovely entity, clean vanishes. The westerly trees play the part of a mere protective apron to the fellows that grow immediately east of them; and when you survey the whole grove, none of it reaching very high in air, it is not unlike the roof of a house, a pent-house, sloping back gently at much the angle of a Swiss chalet. Farther back from the coast, where single trees have a better chance in their fight with the west wind, the shape is nearer the mushroom shape than is common in the Midland and Eastern counties. Compare, for the sake of illustration, the oaks, the abundant oaks of the valleys between Plymouth and Truro, with the oaks still surviving at the extreme edge of old Windsor forest, where it ended at Aldermaston between Newbury and Reading, or at Hatfield. How splendid the elm appears when you return from the West. It is not Gothic, like the pillar of the poplar and spruce, or the arches of the lime and ash. It is not Gothic, but it aspires; and like other domes has a sort of reserve of height. You feel that it is higher than it looks to be. On such occasions you think it the most satisfying of all trees, the truest to its own art. Are you wrong?

The bushes of the West are as free-growing as the trees are dwarfed, so free that at a certain distance it is difficult to distinguish a hedge from a bank. The bank becomes a hedge, in a trice, a rock garden, planted not with little things but big: Tea-plant and honeysuckle; gorse, broom and thorn, quite hidden at the base with devil's bit scabious and snapdragon, with bladder campion, with Hart's-Tongue, and many ferns.

Doubtless all such distinctions between East and West are muddled up with other distinctions as between coast and inland. The tea-plant loves the sea, and flourishes not less on Norfolk than Cornish walls,

but nowhere, perhaps, do you find in the East quite that commingling of many plants that marks the West. Where the tea-plant grows best in Norfolk it grows almost alone. In the West it seeks companions.

How many Londoners who visit the sea coast in the West expect that the gulls of Devon will be the gulls of the Thames? Perhaps some come away without marking the distinction. Gulls are notoriously difficult to distinguish, in part because their plumage differs at different ages. And the most learned make their mistakes! It is said in the books, in the best books by the greatest authorities, that the black-backed gull does not breed on the South coast of Devon. Yet at the moment a photographier's "hide," as photographers will call their apparatus for concealment, reposes on a ledge, and many cameras are taking many pictures of the young of an undoubted pair of lesser blackbacks. Nor are they the only pair who have nested thereabouts. What a huge and cumbrous and savage creature this gull would look if we saw him among the littler neat black-headed gulls, which make the chief population of the Thames!

But the gull of the West coast at this season is the herring gull, which may be said to be the most gull-like of all gulls. The regular whites and grays of breast and wings are perfectly spaced, and the greens and yellows of leg and beak fit the sea so well that he must be nearly invisible to his prey under the waters. He is as tame at the sea-side as the artificially tamed gulls of the Embankment. You may almost strike him with the prow of an active boat, and under the cliff he will not shift the habitual perch or stop his hoarse, preacher-like voice till you definitely advance upon him.

The singing birds sing a little better in the West than the East. At least in my experience that essential migrant of the West, the willow-warbler, will continue his plaintive piece, turning his head this way and that

as he sings, almost to the day he leaves. He does not relapse into silence like the nightingale, a bird that the West longs for in vain, suddenly or before he must.

DIMINISHING BIRDS

SOME of us have been trying to take an informal census of the parish birds, and its results July 26 are not altogether cheering. We all like to think of England as a paradise of birds, a more happy place for their homes than any in the world. It is the rule that birds nest at the northern limit of their migration, and Britain is just near enough to the south to tempt birds from Africa, and yet so far north that no more northerly part is available in this longitude. Its clime is temperate, so that even the insect-eating birds may live here the year round. All this remains true. A misgiving has come over some of us, nevertheless. Into the Paradise have penetrated subtle enemies of many sorts, destroyers of comfort and of homes, destroyers of life even. However little this paradise of ours is qualified, it has become the duty of lovers of birds and of all who delight in the balance of nature in our island to take stock of the modern interference, and, if it may be, to officiate in due rites of purification.

More or less abrupt fluctuations in the census of summer visitors have always been noticed in England. One of the most capricious birds in my experience is the redstart. I saw or heard none this year in a favourite neighbourhood, and must confess that very many of the more precious migrants among small birds were strangely few—blackcaps, nightingales, garden warblers, wood wrens and wrynecks especially. In one most popular haunt in Hertfordshire not a single nightingale has been heard for four years.

They used to visit and sing with absolute regularity in certain gardens, hedgerows, and little spinneys that are almost hedgerows. More than ten years ago one full-throated bird sang within a few yards of the telephone in a country cottage, and a neighbour three miles away listened to him over the wire. The cause of the disappearance is almost beyond dispute. The songs were heard by that artist in hunting, the little owl, introduced from Spain by the late Lord Lilford and released by him and others. It so abounds in the neighbourhood that for want of nesting sites in hollow trees it has taken to the ground, and is now often bolted from rabbit-holes by local keepers.

It is scarcely to be doubted that the birds were routed, if not killed, by the owls; and since birds for the most part choose their nesting home by heredity, the parish is now a place "where no birds sing." A symptom of hope may be found in the appearance of a pair in the garden of a neighbouring town. It was safer than the country. Surrey was rich as ever in nightingales, and all the warblers, not least the nightingales, swarmed on the north coast of France, at such favourite haunts as the copses of Paris-Plage and the bushy dells and banks along the railway from Havre to Paris. Redstarts and nightingales are not fewer in the world, but they may very easily be discouraged from crossing the Channel if all is not well on the other side, if no picture of a seductive hedgerow lies in the subconsciousness of their inherited memory. In the persistent multiplication of this foreign owl—it is now common even in the Isle of Wight—lies a real risk that the nightingale may quite vanish as a British bird.

We notice the ups and downs of our smaller and more furtive birds sooner than the fluctuations of the bigger birds; for the reason that song is more obvious than sight. How many people would be aware of the vanishing of the night-jar or greater spotted wood-pecker? But more big birds than little birds are

threatened. Scores of naturalists have lamented the absence of plover. In the North, especially round and about the bigger towns, they have been mercilessly shot in defiance of protective laws; and everywhere guns are multiplying in the hands of a more leisured working class. In the South the enemy is not chiefly the gun, but the Cambridge roller. On a certain Hertfordshire tilth, one seductive ridge has been thick with plovers' scoops and nests every spring within memory. The eggs were as close almost as the clutches of terns' eggs along the spit of beach at Blakeney. For the last three years not a pair has ventured to consider the site. It happened one year that the weather was dry just after the eggs were laid, and the farmer wished to squeeze up what moisture there was to the roots of his young wheat. Twice, with an interval between, he rolled that stony ridge, and every egg was crushed, every scoop flattened. The plovers love the neighbourhood, but this year the only nests were in the river valley. The once popular tilths on the ridges were wholly deserted. It is possible that this growing belief in the efficiency of the roller on grain crops in spring may change the nesting habit of the bird, and drive it from upland to valley, till such times as science shall decide that rolling is a mistake or corn land quite gives place to grass.

Of the rarity of the corncrake—still as numerous as ever in Ulster—there is no question among observers in Southern and Eastern England. Two favourite nesting haunts with which I was familiar have been deserted owing to rather greater zeal in the use of mowing machines among the rough meadow grass. One site was along the Wey, the other along a brook flowing into the Ouse, just above Godmanchester, where happily the reed-warblers still swarm and a cuckoo's egg may be easily found. Some think that the cuckoo grows rarer. If so, the fault lies chiefly with the too expert oologist; and generally in regard to the rarer

birds—chough or phalarope or snow bunting—the danger is the uncontrolled desire for so precious a clutch or corpse. How many bittern and hoopoes are to be seen stuffed in private houses! Both birds, as well as golden orioles, have appeared this summer in England; and both may be added to our nesting species, if protection is effective.

Finally we may plead for protective lessons in our village schools. The old mania that the war seemed to check, for destructive birds-nesting, is very strong in the most modern boy.

ST. JAMES'S PARK

IT is an extraordinary pleasure on visiting London to find the water at St. James's completely July 26 restored from its wartime desolation. Like the coster's "Benjamins," the revived lake has been "cut saucy, with double fakements down the sides" The straight edge by the bridge has wavered into sinuous curves, whose rather sophisticated lines will presently, if the Board of Works is wise, be broken, if not concealed, by water-loving plants How well gunnera and mimulus and willowherb would fit the site, with just one group of red-and-yellow sallow! On both sides of the bridge, where before the war the black-headed gulls would rob the diving duck and mallards and pochards of the generous scraps thrown from the bridge, great variety of the finest water-lilies have been lowered in wicker baskets (much the best way of ensuring the success of the plant), and are now in full flower, very handsome and proper. If the gulls and ducks come back in time they will be almost jealous of the new attraction.

Now St. James's Park, especially when the autumnal mists add distance and vagueness to the official buildings beyond, is one of the most charming bits of country

to be found in any capital. Battersea Park is the more skilful piece of landscape gardening—indeed, it is perhaps one of the very best in the world; but Battersea is almost suburb; and, in any case, the glory of St. James's is of another sort. It is garden, it is park, it is sanctuary, it is almost a zoo and a botanic gardens, flourishing in all its presentments at the very hub of London. It is worth the pains demanded by all *The-Best-Things-of-their-Sort*.

Londoners—for Londoners have a mighty rural bent—have missed the water, which is the eye of the scenery, more than can be expressed, and will rejoice in the flowing back. The eastern end, where the pelicans come from, is not yet restored. Workmen still toil there, but they will be gone when the migrant population of London has returned from its flight to the north, and must be content with a more conventional scene than the heathery moor and a tamer bird than the red grouse. The pelicans will then be in their place again, I trust, and recall to some of us how magnificent a spectacle is a flock of wild pelican, flying low over the waters of a Queensland lagoon or squatting on a flat by the Murrumbidgee. Yet why the pelican only? The bird that above all others would best give those whom Town immures the savour of lake scenery would be the heron or crane. They are birds that take kindly to the qualified freedom of such a haunt; and the sight of their long gray figures and sapient noses above the shallow waters would give us pleasure additional to the wonder engendered by the curious pelicans. The tribe would delightfully fit the place and the place the tribe.

Let us in any case have greater variety of birds, pure-bred duck as well as the many motely crosses that will succeed. The Golden Eye is one example. It was, so far as I remember, a bird of this variety that many years ago was exchanged for some of the wood-pigeons, in an interesting deal between the Board of

Works and Professor Hornaday, who presided over the Bronx Zoo of New York. He proved a noble friend of Britain during the war, but let us also remember that graceful little gift to its metropolis at an earlier date.

The resurrection of St. James's—a Phoenix arising from something much uglier than ashes—might be celebrated by the planting of more trees, really suitable to the scenery. Beautiful trees there are. The fruitless figs have great broad leaves, most comfortable to the eye, and there is a touch of genius in the tall Lombardy poplar alongside the bridge—a tree much appreciated by the sparrows, which love to wedge their untidy lumps of straw and bents and feathers in the niek of the tight branches. The catalpa hard by flowers freely. The willows are big and fine; and, like the white poplars behind the bird-sanetuary, now turn a silver lining to the wind, so like a shoal of little fish in the general aspect that they recall Horace's line about the fish in the tops of the elms. But we miss the weeping willows, such willows as make half the glory of the Cambridge Backs. Is it altogether fancy that the London trees, like Australian trees, have a tendency to weep more than country trees? Look at the planes and even the thorns.

However this may be, those who planted the Park had a pleasure in weeping trees, but somehow or other the taste was a little perverted. Weeping elms are everywhere; and the weeping elm is a twisted, ungraceful thing—odd, not beautiful, and entirely without the charm of the Babylonian willow, which comes first, or the weeping ash, which is a good second. Both should flourish and grow freely to persuasive dimensions along the sides of the lake. More salient and thoroughly in keeping, would be a group or two of the coloured osiers, whose stems seem to harbour the very essence of the autumnal tint—a thing missed in almost all London trees owing to the premature

falling of the leaf. Another tree for which a less urgent plea may be raised is the balsamic poplar; and in general a seedling of water-loving plants might be attempted. Is the *innomulus* grown anywhere in London?

It should not go beyond the purse of the Board to affix a certain number of bird boxes to the trees. This is done with quite extraordinary success in some German towns; and if the size of the holes is very carefully regulated, the tits at any rate should defeat the sparrows in the competition for these desirable nesting sites.

It is a real pleasure to the naturalists to watch in the parks, and not least along the Embankment, the nesting of the wood pigeons, the pigeons which wax so gigantic in sympathetic London. They have not in any degree lost their natural instincts as the sparrows have. On this subject—though the place is a hundred miles from London—I must record an astonishing nesting freak of the pigeon which I was shown last week. We saw the mother bird, an undoubted wood pigeon, come out from a hole at ground level under a little outhouse. Far inside the hole, as we found by levering up a board, were two well-grown squabs. Has any one come upon such a strange choice in a nesting wood pigeon? That the bird is a wood pigeon is undoubted. There is no nest, or much less stick.

AUGUST



THE greatest change of all the year begins in August, though it is the most changeless of the months in the processes of nature. The summer truce ends on the First, when duck, which began to nest as early as February, may be legally killed, and sport becomes the subject of the moment on the twelfth when the Red Grouse—the one bird peculiar to this island—are shot by the hundred, by the thousand on the moors. But these artificial changes are as nothing beside that oldest of festivals, the festival of harvest. August almost coincides with the grain harvest. On the First the landscape is floored with the white and yellow of ripening ears of oats and barley and wheat. By the thirty-first the hard stubbles are aisles of maturing stooks. Innumerable partridges, rabbits and rodents have their roofs destroyed over their heads. The migration of the richer people to the northern moors and of a larger class to the seaside is small beside the migration from the fields, and a little earlier of sparrows out of the towns to the harvest. This habit of taking a country holiday has increased a good deal of late, at least in the midlands, to the loss of the farmer. What with sparrows and finches on his stooks and a little later rats and mice in his stacks, he loses a bigger percentage than he reckons of the proper yield of his acres. Other migrations begin. Of the cuckoo it is accurately said, "In August go he must," and the swifts and turtle doves follow on his heels.

It is not only the accident of social custom that takes people to the sea in August. The world is a little stale. Nothing either waxing or waning. Even

the late fruits mature rather than ripen. The stubbles are harsh and the grass fields hard and browner than they will be again. The birds are very silent. No one has caught the character of the month better than George Meredith in *Love in the Valley*, which is a storehouse of generalised observation.

" Doves of the fir-wood walling high our red roof
 Through the long noon coo, crooning through
 the coo.
 Loose droop the leaves, and down the sleepy roadway
 Sometimes pipes a chaffinch ; loose drops the blue.
 Cows slap a slow tail knee-deep in the river,
 Breathless, given up to sun and gnat and fly.
 Nowhere is she seen ; and if I see her nowhere,
 Lightning may come, straight rains and tiger sky."

Perhaps he should have noticed the yellow-hammer—the one singer of the month—rather than the chaffinch ; but we can see and feel and hear veritable August in the lines.

The complexion of the month is different by the sea and on the moor. The pools on the shore are yeasty with life. The big fish come nearer the land. Untold millions of eggs, hung on sea weeds, begin to come to life. The wind is fresh off the sea, and on the moors, mauve with ling or purple with bell heather :

" Oh, my heart is fain to hear the soft wind blowing,
 Soughing through the fir tops on the Northern
 fells !
 Oh, my eye's an ache to see the brown burns flowing
 Through the peaty soil and tinkling heather bells."

The southern commons with their heath butterflies and ling and potentilla and harebell are hardly less desirable.

Lammas Day, the First, is definitely identified with

harvest in rural speech. The new wheat is known throughout the Midlands as Lammas wheat; and Burns in the North remembered how bonnie were the corn rigs (he probably meant oats) "Upon a Lammas night."

WHEAT AND BIRDS

EXACTLY on August 1, Berkshire labourers, armed as thousands of years ago with a sickle and a Aug. 2 bent stick, set to work on the wheat harvest.

They cleared round the edges of the field a surrounding pathway to give space for the cutters and binders, which got to work in their more professional manner the next day. The field must be one of the earliest in England, for the harvest is a late harvest (I have seen wheat cut as early as July 9). Yet not so late—or so bad—as seemed likely. All farmers reckon that a period of six weeks separates the first blooming of the wheat—when the white pollen just powders the blue-green ear—from the date when the ear is hard and yellow, almost orange. But this season the six weeks shrank a little, owing to early cold which delayed the blooming, and late sun which hurried the ripening.

Near by a field of oats had been cut a week earlier, and among the denizens that it drove into the open were a hen pheasant and four chicks, not a fortnight old. What made them arrive so late in the year? Probably the loss of earlier nests from one of the scores of enemies that threaten the ground birds—foxes, stoats, weasels, rats, the brown owl, and the little Spanish owl, the sparrow hawk, and, worst of all, the carrion crow and that other crow, the magpie, and the jay. Perhaps I should add the hedgehog, which seems to be multiplying out of all proper degree in some

counties. Few facts of natural history indicate more clearly how the life-process of animals is subordinate to the seasons than the development of these late broods. However congenial the weather, they grow slowly and fail to reach their full development. They enjoy as long hours of sunshine, as fresh a supply of food as if they were true to date, but August is not a growing month ; and the chicks are not less sensitive to its quality than the trees and flowers. The very early broods, especially of duck, often die from want of food ; but they grow even under conditions of half-starvation more quickly than these late broods, however well fed. Several observers during this strange summer have noticed how long certain birds—especially it seems, the French partridge—left their clutches before beginning to sit ; and it is hard to account for the undoubted fact that the eggs so deserted remained fertile for weeks.

My own experience of the oddities of this season is rather the reverse. Many small birds, notably the finches, nested early and are nesting late as well. Some are now feeding the third family. They are like the pear trees in my garden, which flowered a second time when the few first fruits were already large, and this second crop set well and looks, for the moment, as if it would come to maturity—doubtless such qualified maturity as the young pheasants. The late flowering of the pear is common enough ; but such late setting of fruit is, I should say, very rare. Yet another outfield of the neighbourhood also under oats, has been hammered so flat by a very local thunder-storm that the birds can walk across it. And walk across it they do. Never in my memory has a grain crop catered for quite such a greedy horde. It looked like the streets of the City in the luncheon hour, hidden under a population of black coats. The chief harpies were the rooks, which for the most part are more or less defeated by the upright wheat and oats ; but

here they could peck the grain like hens in a yard. It is a question of whether an acre will yield more than a sack. The curious smoothness of its surface—every stalk lies pointing eastwards—may enable the cutters to do the work in place of the slower and more expensive reapers; but it has helped the rooks as much as it will the machines.

A CURIOSITY of natural history has just come under the notice of the doctors in the village.

Aug. 3 A number of boys were attempting to take the young of a barn door owl from a hollow tree, and one boy less aggressive than the rest, was looking on from the ground. The mother owl chose this inoffensive person for her vengeance. She attacked him with claws and beak—so the wounds suggested—and there was a moment when his sight was threatened. I have seen a moor-hen attack a boy, swallows attack a cat, a water-wagtail a dog, and a hedge sparrow an adder; and, of course, many small birds will mob bigger ones. But how very rarely a human being is attacked by any bird or smaller mammal, except in sheer self-defence! Perhaps the most frequent instances concern stoats and owls; and only the stoat, so far as I know, will deliver a quite unprovoked attack.

DRAWBACKS OF PROGRESS

THE more it is looked into, the more extensive appears the influence of new machines and forces

Aug. 3 on the bird and mammal population of the British Isles. The whole tribe of naturalists lament the routing of the plover by the farm roller, of the landrail by the mower, of the nightingale by

the imported owl, of chough and phalerope by the collector, of bittern and hoopoe by the casual gunman. Spreading suburbs encourage the carrion crow and all the race of owls. Certain vermin, if one must use the word, are undoubtedly flourishing owing to the absence of so-called "keepers" and of hunts. Otters have recently been traced and in some cases seen up to the very outskirts of London. My own experience is that stoats, and perhaps weasels, are rapidly multiplying, perhaps to the advantage of the balance of species, in the home counties. They were once—in the days when the pole-cat flourished—almost as numerous as their victims, the rats, within twenty miles of the Marble Arch—to quote the records of one particular estate. "Set vermin to catch vermin" was an old maxim, now quite out of fashion. The loss of the art of trapping enabled the mole to destroy whole fields in some parts of Essex. A sudden rise in the price of fur after the war reduced the numbers, and now again as the fur loses value, the mole—useful in his degree, very much as the worm is useful—is regaining his dominance. The surrender of ploughland to grass, rather surprisingly, encourages him. The plough has the advantage, from the mole's standpoint, of softening the ground, but it is an interfering machine. It destroys the run of the mole, as well as the "wee bit heap of leaves and stibble" of the field-mouse.

Tar on the roads and the motor in place of the horse affect, in various degrees, both fish and fowl adversely; but the destructive agency that out-Herods all the rest is waste oil. All round the coast and up most of the estuaries sea-birds are perishing miserably in great quantities from contact with the refuse of oil engines. Once the feathers are contaminated the birds lose all power of flight and as a rule die slowly and painfully. The victims amount to many thousands. In earlier days birds were killed in quantity by trains and telegraph wires; but learnt to avoid these terrors; and

the instinct of avoidance seems to be passed on to later generations. But it is scarcely possible that the coming races will learn to escape the contagion of those ugly metallic colours that we see now on every estuary and must ourselves avoid in our bathing haunts. The contamination is too widespread for that. The waste is so profuse in some rivers that even boating may be made unpleasant, and the patches of oil are still wide and coherent far out to sea. Shags and cormorants frequently come up from their long dives into the very midst of it. All descriptions of gulls are caught, and may be seen on sea and shore painfully striving to clean themselves. The plague is so common that you can scarcely avoid the sight whatever seaside resort you may visit, though it is far worse in the harbours and estuaries. A good many of the birds seeking safety in swimming, are drowned; a good many starved. Their bodies lie rotting in numbers amid the flotsam along the edge of the high tide.

Oil, of course, must be used as a motive power on the waters, as tar must be used on roads; but there can be no good reason for the enlargement of such excess of oil as often fouls Southampton Water or the mouth of the Dart. The remedy lies with the mechanician, who must in the sequel learn to be his own scavenger. The wholesale slaughter of birds with oil waste is no more necessary an accompaniment of the newer modes of transport than the fouling of the rivers with tar.

We have not as yet any proof, but it is not unlikely that the fish are only less adversely affected than the birds. The oil may not kill them, but it may easily drive them from areas where the danger threatens. It may even permanently affect the route of migration in the herring or mackerel. The problem, of course, is not only British. The Rhine is sometimes purple with a scum of oil. Bathers at fashionable seaside

resorts in America have raised complaints; but the Briton seems to be peculiarly careless or extravagant with oil; and, of course, British harbours are fuller of motor craft than the harbours of most other lands. The hope is that our native affection for birds may itself lead to reformation. Emotionally, when one has once seen a bird killed by the foulness, it seems inconceivable that the form of cruelty shall continue or be treated as an inevitable accompaniment of human progress.

MASON WASPS

How very much less ungracious is the wasp than the
hive bee, perhaps because she is less highly
Aug. 8 strung! The reflection follows a week of
close contact, in the proper sense of the word,
with a wasp community in the bank behind a lawn
tennis court in the Isle of Wight. I have watched
them from a few inches' distance day after day, put
my hand into the nest, cleared away the ground,
pulled grasses out of the paper combs, and never
suffered so much as a threat from the inhabitants.
And how closely you can observe their ways and
processes!

The particular nest was set in a crevice formed by the partial subsidence of a steep bank. By cutting away a very small amount of earth, a third at least of the circle of the paper nursery was exposed. It protruded like a bay window. It is always amusing to test the zeal and intelligence of the wasp by setting obstructions across his doorway or littering the entrance. This is paved with a thin veneer of polish laid on by the mouth of the wasp, and is kept very tidy. The housemaids carry away obstacles or cut them off, very much as a beaver will, and with infinite patience

continue to carry away the rubbish however many times it is replaced.

Using the opportunity of this singularly well-placed observation nest, I tried a much more drastic interference. On one occasion with a pair of scissors, on another with finger and thumb, I removed a considerable section of the paper, making a sort of window into the interior of the nest. The rent and damage were at once recognised as serious. Wasps crawled out in numbers from the unseen entrance, deep in the crevice, and an air of agitation prevailed. But it lasted a very short time. The engineers at once held a consultation, and came quickly to a definite decision. How this was done or by what means communicated to the builders remains to me a mystery. What is certain is that within a few minutes the workers—plasterers is perhaps a better word than bricklayers—had undertaken the repairs. They all proceeded on much the same system. Each would select some flap of the existing paper, grip it very firmly with the front pair of legs, and insert the edge between the very tips of the mouth. She would then move backwards, working the while very hard with the jaws, from which a half-liquid plaster was continuously squeezed out, as it might be from a tube of liquid cement, and simultaneously shaped. The usual length of paper-edge taken at a bout was rather more than a quarter inch; and each plasterer went over its piece either three or four times, before retiring to manufacture another hod-full of mortar.

The work was done with altogether amazing speed, Each of these separate jobs of work occupied rather less than four minutes. When it was over you could see very distinctly just how much had been accomplished. The pale gray paper of the older work was now rimmed with a dark gray line of the new damp plaster, which retained its colour for some half an hour. These workers united to restore the general circular

symmetry of the nest, but there was nothing formal or symmetrical in any particular detail. Thin lines of plaster at any convenient angle were drawn out to fix this fold and that firmly in position. The wasp worked always in a manner to suit the exact problem before it. The energy and celerity of the repairing were more astonishing than the adaptability. An excision not less than a half inch cubed had entirely vanished between 6.30 p.m. and noon the next day; and the workers, so long as my observations lasted, were few, seldom more than three or four. At the end of five days the visible bulge of the nest was entirely perfect, though at various intervals much paper had come away with the clods of earth. Bents and sticks, which went deep into the nest, had been pulled out, and chunks of paper had been intentionally torn out on three occasions. The workers were so absorbed in their tasks that you could have used a magnifying glass to watch them, but they allowed you to peer so close that this was unnecessary.

It is tempting to moralise—may one say socialise. But the temptation is best avoided, and no subject is more interminable than the comparison of reason with instinct, or, indeed, of individualism with socialism. Let it suffice that the wasps worked hard and well. They did their jobs soundly and sensibly. Doubtless, too, they do their job in what we call the economy of nature, whatever that may mean; and that is why the zeal of the gardener to "take" the nest may be judged to be unreasonable. From time to time, at wide intervals, wasps so flourish as to be a plague. Odd fields cannot be ploughed. Yachts cannot moor on certain reaches of the rivers. Meals, if they include jam, become a burden. But what is to be said of the reason of gardeners who leave heaps of cut grass where house-flies breed in thousands, but lay in stores of poison or sulphur and gunpowder to destroy the nests of one of the most interesting of all

insects, and not the least useful? Watch these wasps a little later, when they begin to attack the blight and the flies. To destroy wasps is often as bad natural history as to destroy weasels.

RUS IN URBE

IT is curious to be in London—of all days—on August 12, the Festival of the Moors. There are Aug. 12 worse places nevertheless even for a country lover; and it is full of surprises. Almost as many people come to London in August as leave it. While Londoners are thirsty for the moors or seashore, others, both from the British counties and from abroad, turn their thoughts to the attractions of this Town of Towns. How many of them, I wonder, routed by the rays of heat that bound like racquet balls about the walls and floors of the streets, escape into the cool places where London keeps unsullied the delights of the country! Quite suddenly London authority has grown jealous of her rural charm. One of her coolest lanes—it runs from Fleet-street to the Embankment—has been closed, because both native and visitor were making of it a thoroughfare, a base means of communication, instead of a spot where the Londoner could practise

“The delicate and gentle art
Of never getting there.”

It is to be hoped that the closing will not too much limit the folk who enjoy the delicious quiet of the Temple courts and gardens. Of all its corners, the very choicest, perhaps, is at the edge of Fountain Court. “*Ille terrarum mihi praeter omnes angulus ridet.*” A plane tree, some eighty years of age, I

should judge, stretches the broadest leaves over the fountain ; and as you look up into its green canopy you discover that the birds share your preference. A wood-pigeon has built her stick platform well out on one arm, and the rooks attempted to build their heavier nests higher up. They say that some one with a murderous weapon, afraid of the cawing as too judicial a noise, frightened the pair away. Probably it is untrue. Who would not enjoy rooks or any bird you please within the precincts ? This August the pigeons, even in the great heat, coo and croon as peacefully as in any country grove. You may say here as truthfully as in *The Great Garden* :—

“ —and over all the dove
Persuasively, with low mesmeric whisper, wills
The world to love.”

Only for dove, read pigeon ; for it is rare, rarer than it ought to be, that the migrant turtle dove finds a home in London's open spaces.

Too much of the Temple is “ a plane tale,” though some attractive elms grow by the eastern boundary, and perhaps for this reason more birds—such is my experience—are to be found in Gray's Inn than in the Temple. Perhaps they like especially, as do visitors, the leaning catalpa, which is the chief of its glories. Yet the Temple ought to be preferred. I am persuaded that birds migrating up the river could be tempted into any green spot where there was good hiding. How else does it come about that so many are seen for odd moments alongside the almonds by the bridge into Battersea ?

The Temple is cool and serene on the closest day, and you might travel far to see finer trees. Nevertheless when August comes, comes a thirst for the seaside where few trees are. Only in rarely favoured places, above all the Isle of Wight, do big trees venture to

the very edge of the sea ; and beyond doubt there is no coolness like the coolness of a tree. To lie and look up into the leaves, just waving and whispering, to watch the quiet domestic goings and comings of the birds in the branches, to hear the sleepy monotony of the greenfinch, alone energetic enough to make any noise, good or bad—this should attract as surely as any sea that tosses back the sun's rays with power and too much brightness, or as the shore that refuses all shade with its gritty sand that holds heat unknown to the grass. But perhaps a certain exhaustion in nature tempts us to abandon the deep, deep country and watch instead the anemones, red and green and brown, wave their cactus-like leaflets and the queer sand-coloured gobies and backward-jumping prawns in clear pools, or the mottled blennies lurking under the stones. We want to explode the bubbles of the bladder-wrack, tread with naked toes the flat sliminess of the oar-weed, to handle the trough shells and Painted Tops and swelled whelk eggs.

Yet it is curious how in the oppression of August, the great migration is chiefly to places where shade is hard to find. How shadeless are the moors, and it is not always that even the youngest yearn "to tread the ling like a buck in spring." The compensation is a certain freshness in the bell-heather and a real freshness in the air. Here is where the town fails, and both sea and moor succeed. We want most in August the moving air, which keeps the flies away, and tempers the radiance of the hottest sun that ever Britain knows. So it comes about that bell-heather and grouse, seaweed and sea water attract us more than plane and pigeon, or oak and finch. But it is only in August that the preference is strong. When the year that now stands still begins to retreat and change, we are glad again to recover our inland joys.

LATE NESTS

How very late in the year our home birds are nesting !

In a charming Buckinghamshire garden—
Aug. 17 a garden that had the character of a cottage garden with the rareness of a collector's home—a brown linnet is sitting on four eggs. She had chosen the side of a pergola pole at a much frequented spot, and took little or no notice of the traffic to and fro. Other niches in plenty contained the nests of birds which had just brought off their broods, some in nests faithfully built on the same spot year after year. The garden robin had once again chosen her favourite tin kettle ; and never was a kettle that looked less like a kettle and more like a home. It had been fixed to the side of an ivied pole, and the ivy had so grown over and round it that the only obvious part of the kettle was the wide, inviting opening. This is not by any means the first kettle that I have known to play the part of nesting box ; and those who wish to provide cheap houses for these birds—for robins, wagtails, redstarts, and even green linnets and flycatchers—will find that almost any old pot fixed in an appropriate spot has its attractions. And it is a mistake to encourage only tits, as most of us do by providing boxes which only tits can use. The Buckinghamshire gardeners are wiser ; and yet in this garden the tamest of all the birds was a tit, a cole-tit, as I was told, which would take food from the hand and visit the breakfast-table like one of the household.

While some birds are nesting—the corn bunting has here and there not finished her clutch—others, born this year, are already beginning the great migration. The bird of the year has been the swift. Their numbers have been legion, and to some extent they

seem to have changed their habits, as all birds do when they become very numerous. Some few arrived before the swallows and martins, if not in England at any rate on the Continent; and later the birds became as numerous as starlings in English villages. We have heard throughout the summer their wild hunting scream (they are after all nearer hawk than swallow in race) usually kept up so late in the day that they made duet with the owls.

To-day they are gone from their summer haunts mysteriously. All migration is a little mysterious (though perhaps it is less mysterious that a bird should find its way over thousands of miles than that the wood-wasp grub take the very shortest route to daylight). But the swift's migration, to the ordinary observer, is of all the least palpable. You are aware of no gathering of the clans. You seldom see the departure. You seldom read of any observer who claims to have seen the departure. The birds were here, and are no longer here—that is all you know. Doubtless they depart at night, as many birds will, and fly high. Their great speed does the rest, but their speed, too, is not without mystery. The beat of their pointed wings is a fussy little waggle compared with other wing-beats, but incredibly effective. That the swifts are among the best of all fliers, perhaps the very best, and use so very distinctive a wing-beat, would suggest that the mechanics of their movement is at least as well worth analysis as the flight of gulls and buzzards watched with such patience and penetration by Orville and Wilbur Wright.

Why swifts leave us so early in the year has never been explained since Gilbert White put the query. "This," he wrote, "is one of those incidents in natural history that not only baffles our researches, but almost eludes our guesses." The air is still warm, food more than plentiful, the young have but lately left the nest, but the birds abandoned the North a week ago,

northerly England last week, and most will be away in Egypt this week. Did they foretaste chilly days and lower suns, or is there some tide in the body which mounts to the moment of ecstatic energy necessary for the long unbroken flight? The threatening moult may affect the older birds, but hardly the younger; and they migrate together. None of the many reasons seems to be quite a good reason, or to be founded on more than mere conjecture.

FROM THE TRAIN

How much people, especially English people, miss who, travelling by train, keep their head Aug. 18 in front of a book or newspaper! Almost the best part of a distant holiday may be the journey there. The railway companies, which are becoming very prodigal of pamphlets and books on the attractions of their routes, have, nevertheless, not yet begun to appreciate the particular pleasures that their travellers may enjoy from the train. They are not local or precise enough. I should like, as an example of pride in their own reach of Britain, to see some jealous competition among the companies for the possession of the loveliest cutting. Until lately, until this week, my impression was that the prize would go to some of the southern lines, which evoked Meredith's "shout of primrose banks," but now my particular fancy turns to a rocky cutting not far south of Newcastle. In addition to heather, ling and bracken, it has stone weathered to the most delicate tones of red and yellow, stone that would win a prize at the Chelsea show with or without flowers. Among a people with a really proper sense of values the train would slow up as it passed through such charms as the British Columbian trains show,

and indeed stop, to allow the travellers to take in the too fugitive splendour. Why should not the companies run "Seeing-England Trains," with short halts at appropriate places?

It is my personal fortune often to finish a journey with a quarter of an hour's travel on a single and very sinuous line. It is as refreshing as a country walk. You could catch its most intimate beauties with a seven-foot fishing rod from the carriage, and need never wonder which flower is which, so close do they come to the window. I still have a grudge against one express because the other day it passed one solid bank of yellow at such a speed that I still do not know whether it was hawkweed or ragwort. On the poor single line I spoke of you may always see whether the golden bank is broom or gorse, and how the snapdragon is mixed with the dandelion.

Doubtless the old mottoes hold: "Always get over a stile," said Richard Jefferies.

" Suppose that while the motor pants,
You miss the nightingale."

sang Mr. E. V. Lucas; and it is true enough that only the intimate converse with nature can give any real insight. Even walking may be too disturbing a mode of motion for the practice of the highest observation. You see most when you are most still:—

" We only know what nature means,
Who watch the play behind the scenes."

So much must be allowed. The form of observation which we all enjoy on the way to and from a holiday or on any form of travel, must always be a little superficial. Nevertheless, the railway train is not to be despised for its function of what we called in the war an O.P.; and the Ruskins have said too severe things

about it. The very structure of the line has attractions, even to the lover of the wild, much more to the lover of a garden. Does scenery ever attract more admiration than the picture framed by the arches of a high viaduct, say, at Welwyn, in Hertfordshire, or to those patches of Welsh meadows displayed more than once through the circular viaducts between Craven Arms and Llandudno? If you wish to taste the rural charm of England you risk no disappointment if you look from the carriage window when the Great Central train leaves Aylesbury and begins to enter the gentle pass across the Chilterns. I would claim this view as the most English piece of England visible from any railway, but feel no sort of confidence that there would be any general agreement about the best railway view or the best cutting.

As a rule the traveller is not vouchsafed much insight into the ways of birds and beast. Pigeons, rooks, and partridges may almost complete the tale of a long journey. But no one so well as the train traveller has the opportunity of watching the distribution of the flocks and herds of the country. What is the most salient distinction of Britain compared with other countries? You will find, if you watch well, that the marvel is the greater number of sheep. Britain has more sheep to the acre than any other country in the world, more, in the aggregate, as some one noted the other day—I think in *The Times*—than even Queensland, where a single sheep farm (to quote from personal annals) may measure fifteen miles square.

WORKERS AND DRONES

SUDDEN and rare bursts of sunshine between long spaces of gloom have, as always, stirred the Aug. 20 hive bees to almost ecstatic activity. In one very strong swarm, the workers could with difficulty force their way in and out for the multitude of traffic. Bumps and collisions were the order of the day.

This rage of work has made the drone especially conspicuous, both to the human observer (seated in a wheelbarrow at the side of the hive) and to the bee-workers. The drone, when not using his broad powerful wings—what a different note they give from the workers!—is a ponderous, dull-witted object. His stupidity is gross enough to be actively irritating. He has some trouble to find the entrance to his home. Frequently, after much hovering and groping, he alights on the false eave over the entrance and tries to crawl up the wall. He seems to have qualms, even when he has found the alighting board, about crossing the slight crack between it and the entrance. An instinct too deep for any of us to trace makes him, as the days shorten, an object of hatred to the workers. His violent doom is writ, whatever the season; but circumstances may promote assassination.

The murder of the drones has been already in progress this August for some weeks. A sudden overwhelming fury—such is the semblance—possesses a little worker. She suffers an irresistible "brain-storm," leaps on the drone, and exerts almost suicidal energy in the effort to eject and kill. You can watch the straining of the limbs when she gets her grip as plainly as if you stood before the portentous muscles of the Laocoön statue. In what little record I have been able to make, she nearly always seizes the right wing

of the drone and seems to strain after three advantages : to prevent the use of the drone's wing, to bite the base of it, and, while straining, with curved body and stiffened legs, to seek the right crevice for a coup-de-grâce with the sting. The drone slides round on the alighting board in awkward circles, and in nine cases out of ten finally shakes himself free by virtue of his superior weight of body and strength of wing. His escape was certain if the two fell off the alighting-board early in the struggle. When I put a flat piece of plank flush with the alighting-board the worker bee gained a point. A fair field and no favour was to her advantage. In a typical example of victory for the worker in one of these duels the right wing of the drone was put out of action and the worker, walking forward down the slope, pulled the moribund drone behind her. Its weight dragged the two apart when they reached the precipice. After one fight the conquering worker seemed completely exhausted, and was escorted, half-pushed into the hive by two companions. She mounted the slope as if it were a stiff climb.

It is a brutal sight, terribly—what shall I say ?—Communistic, Red. But no parallels are quite consonant and logical, if you are truthful. The hive has only one mother. The father is selected by the strictest working of the principle of selection of the fittest, if one may compound the phrase. The workers die of overwork, of the mania for work. Even their swarming instinct may be kept in check by the artificial supply of work to be done, by adding comb or removing brood-comb to another hive. The drone is a drone, because he cannot work or fight, not because he will not ; and so far does not correspond with the drone of metaphor. In most species of insect the male dies naturally and quickly, as one or two among the drones will die. Among bees (and spiders) he is killed ; and the spider queen adds the horror of eating her victim.

The bees in this hive were, as usual, very much less skilled than the wasps in removing obstructions in the work of scavenging. The struggle of various duellists under the alighting board released a thin blade of grass, which raised itself up through the crack dividing the alighting-board from the hive, and bothered the comers-in and goers-out. At once, within a few seconds, a worker fell upon it, tooth and nail, with the sort of fury others fell on the drone. She seized the tip and tried to fly away with it. You could hear the beat of her wings as she swayed to and fro, an inch and a half off the floor, held like a balloon by the fixed strand. She tugged, with her wings beating at full speed, till completely exhausted, and after a moment's rest started afresh. Within five minutes the top half-inch of the grass was completely blackened by the grip of workers trying vainly to tug it away. Perhaps it would have withered off after the rough treatment, and the bees worked better than they knew. But wasps, with their more powerful jaws, would have tackled the job more methodically, more effectively.

With foolish impatience I broke the blade off, to see what they would do with it when severed. They did nothing consciously; but this blade, and half-a-dozen more that I laid on the sloping board, were blown off instantly by the draught of the wings of the numbers flying in and out. With a damped finger you could feel the force of the wind of wings. The sight of the rubbish removers at work recalled the tale of a queen wasp told by no less a person than a bishop—in Australia. He watched the wasp—a very powerful species—making its nest under the rotten wood of a window sill, and barred it out by fixing a needle across the entrance. The returning wasp tugged and tugged in vain. The needle was too tight and especially too slippery. At last tired and balked the queen flew away and the bishop had almost wearied of waiting